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NUCLEAR PROLIFERATION:
LESSONS LEARNED FROM THE
IRAQI CASE
by

Todd A. Dixon

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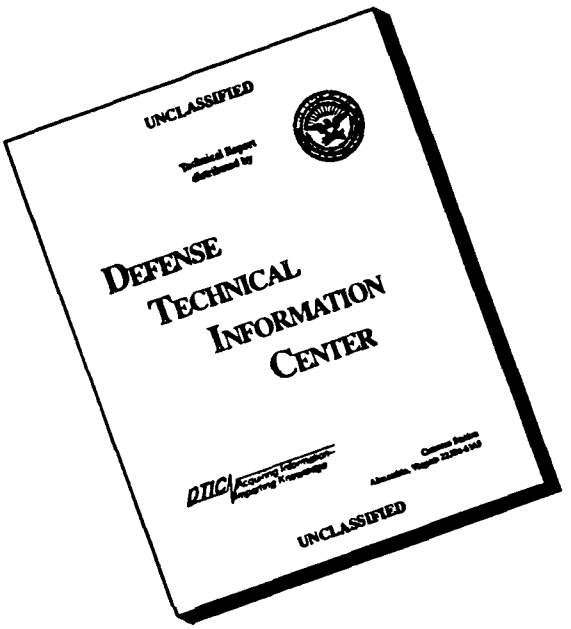

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This thesis examines Iraq's efforts to acquire nuclear weapons. The supply side of the equation is also studied, with a concentration upon the contributions of NATO nations. The strategic culture of Iraq is discussed, in an effort to discover why Iraq sought nuclear weapons. Finally, policy prescriptions are advanced.

The current non-proliferation regime needs to be improved if the spread of nuclear weapons is to be halted, or even slowed. The most promising way to improve this regime is to involve the U.N. Special Commission and the U.N. Security Council in the management of the problem of nuclear proliferation.

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Nuclear Proliferation:
Lessons Learned from the
Iraqi Case

by

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ABSTRACT

The nuclear weapons inspection regime implemented in Iraq following the United Nations coalition victory in Desert Storm is the most intrusive in history. Important conclusions about the current non-proliferation regime can therefore be determined from a study of Iraq's progress.

This thesis examines Iraq's efforts to acquire nuclear weapons. The supply side of the equation is also studied, with a concentration upon the contributions of NATO nations. The strategic culture of Iraq is discussed, in an effort to discover why Iraq sought nuclear weapons. Finally, policy prescriptions are advanced.

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EXECUTIVE SUMMARY

The most promising way to deal with the problem of nuclear proliferation is with a unified worldwide effort. The U.N. Security Council should be the primary instrument in the fight to limit the spread of nuclear weapons. The United Nations is the only forum that contains all the parties involved, has the ability to make international laws with all of the parties present in the decision-making, and has the authority to enforce these laws in a multilateral fashion. The nations of Europe and the United States must be at the forefront of non-proliferation activities, however.

The U.N. Special Commission discovered seventeen sites related to nuclear weapons research in Iraq after Desert Storm. Iraq's efforts placed it six months to three years from possibly acquiring nuclear weapons. The inability of the I.A.E.A. to monitor the Iraqi program revealed major shortcomings in the present non-proliferation regime. By depending upon technologies the I.A.E.A. considered obsolete, the Iraqis were able to make considerable progress without significantly alarming the international community.

Given the strategic culture that has developed within Iraq, it is improbable that its nuclear weapons program will remain dormant following the withdrawal of the U.N. Special Commission inspection teams. The historical antagonisms between Iraq and nearby states such as Iran and Israel, and other factors, such as an aspiration for leadership in the Arab world, contribute to Iraq's desire to obtain nuclear weapons.

With the disintegration of the Soviet Union, nuclear weapons proliferation is becoming one of the leading threats to world peace. The break-up of the U.S.S.R. has also

magnified the problem of nuclear proliferation by giving other nations access to Soviet nuclear technology.

The current non-proliferation regime is at a vital crossroads in its history. Depending upon the results of the inspections in Iraq, the I.A.E.A. could flourish or fail. If the Iraqi nuclear weapons program revives after the inspections are concluded, the Vienna-based organization will be revealed as incapable of stemming the tide of nuclear proliferation. If the Iraqi nuclear weapons program does not resume operations, perhaps the world's confidence in the I.A.E.A. can be restored. This is dependent, however, on how large a role the I.A.E.A. plays in preventing the Iraqis from reviving their nuclear weapons program. The U.N.S.C. should play the predominant role in nuclear non-proliferation activities, keeping the I.A.E.A. in an advisory role.

An alternative argument that may arise is that the I.A.E.A. could be strengthened or expanded in an effort to stem nuclear proliferation, rather than replaced. It appears, however, that the combination of its lack of enforcement powers and its inability to force nations to join the NPT regime or retain the participation of nations that wish to withdraw from the regime places the I.A.E.A. in an untenable situation. The only way to strengthen the present regime is to change the language of the treaty itself, and that may cause an exodus of nations that wish to retain the option of seeking nuclear weapons at some future time, as well as those nations which may feel that stricter inspection standards could interfere with their peaceful nuclear programs.

This leaves the I.A.E.A. in a "catch 22" situation: if the language of the treaty is not strengthened, its current weaknesses will remain; but, if the language is changed, the number of nations that are signatories of the treaty may well decline, hence weakening the ability of the I.A.E.A. to contribute to a world free of nuclear proliferation. This

inability to prevent nations from fleeing the organization also hampers the I.A.E.A.'s ability to invoke the clause allowing it to inspect undeclared facilities and to call on the U.N.S.C. for assistance if these inspections are hampered. If this clause is utilized, the nation under suspicion may choose to withdraw from the regime rather than submit to the demands.

These factors demonstrate the primary limitation of the current I.A.E.A. regime: any nation that does not want to be a part of the legal regime does not have to remain within its confines. The U.N.S.C. may be able to overcome this limitation, because its enforcement capabilities could be used to oblige nations to comply. The U.N.S.C. need not rely upon the nation's desire to be reined in (with regard to its nuclear weapons progress), and therefore the I.A.E.A. must strengthen its link to that body. The spread of nuclear weapons is a threat to world peace, and should be treated as such by the United Nations.

I. INTRODUCTION

This thesis argues that the current nuclear non-proliferation regime, as defined by the Non-Proliferation Treaty and the International Atomic Energy Agency, must be improved. The thesis also presents arguments about how this should be done, if it is to have an effective role in preventing the spread of nuclear weapons to non-nuclear weapons states. A larger future role for the United Nations is the suggested solution. This argument is supported by an examination of the Iraqi nuclear weapons program and the methods that nation used to advance to within six months to two years of having nuclear weapons capability.

Nuclear proliferation appears to be a primary threat that the United States and its allies must deal with if peace, stability and international security are to be maintained. It seems plausible that as more nations obtain nuclear weapons, the odds are increased that a nuclear strike will occur somewhere in the world. The first step in avoiding a destabilizing event such as a nuclear strike is to prevent the spread of nuclear weapons technology to governments in unstable regions. Since the European Community and the United States are two of the major exporters of nuclear and weapons technology, they are inherently responsible for helping to limit nuclear proliferation. The U.S. and the European Community also have a direct stake in the problem of proliferation, since they may someday be the target of a nuclear strike from a nation that obtains these weapons.

The thesis begins with an examination of the efforts of Iraq in order to discover how and why this country reached such a high level of success with nuclear weapons research. This includes factors both internal and external to Iraq relevant to its nuclear weapons program. Following this, the

problem of supply is discussed, as the contributions to the Iraqi nuclear weapons program by NATO nations are reviewed. Next, the strategic culture of Iraq is studied, in order to establish why Iraq sought nuclear weapons, and whether its nuclear weapons programs will continue after the United Nations regime currently in place comes to an end. Finally, policy prescriptions necessary to prevent another case similar to that of Iraq are discussed.

II. THE IRAQI PROBLEM

This chapter argues that the International Atomic Energy Agency, and the Non-Proliferation Treaty it draws its power from, is not capable of controlling the proliferation of nuclear weapons. A case study of the present situation in Iraq regarding nuclear weapons is used to demonstrate this point. The need for an increased role for the United Nations is also discussed. Although there are other nations that have come to the forefront in recent months in regard to the I.A.E.A. and nuclear weapons proliferation, such as North Korea, this chapter concentrates solely upon the Iraqi situation.

The importance of this topic stems from the fact that there are a number of other nations that desire nuclear weapons and must make a decision about whether to attempt to obtain them. If these nations should learn the wrong lesson from Iraq, that the only mistake Saddam made was starting a war before his nuclear arsenal was complete, they may be tempted to choose to pursue a nuclear weapons capability clandestinely. The credibility of the current non-proliferation regime was damaged by the Iraqi incident, and this could have an adverse effect upon its ability to prevent the spread of nuclear weapons. If this credibility can be

restored, however, nations can be deterred from following the clandestine path to nuclear weapons.

The case of Iraq aptly demonstrated the weaknesses of the current non-proliferation regime. The International Atomic Energy Agency and its primary tool, the Non-Proliferation Treaty, did not have sufficient safeguard provisions to prevent Iraq from getting to within six months to a year of having a nuclear weapons capability.[1] Now, the elimination of Iraq as a potential nuclear power falls to the I.A.E.A., as well as the United Nations. This chapter reviews the opinions of experts regarding the effects that the Iraqi experience has had on the non-proliferation regime, in order to define the opposing sides of the argument. It then turns to the institutions that will be involved, most importantly the I.A.E.A. and the U.N., in order to define the tools that the international community must use to eliminate a potential future Iraqi nuclear threat. Next, this chapter examines the problems that need to be solved, both internal and external to Iraq, so that the environment in which the non-proliferation regime must operate in this case can be identified. Next, the barriers that may stand in the way of the elimination of Iraq as a potential nuclear power are discussed, to differentiate the Iraqi case from other nations that may pose a nuclear

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[1] Kenneth R. Timmerman, The Death Lobby: How the West Armed Iraq, (New York: Houghlin Mifflin, 1991), p. 390. The source quoted is an unnamed Pentagon analyst.

proliferation threat. Finally, actions that have already been taken to destroy Iraq's nuclear-weapons capability are examined, with an assessment of how effective these steps have been.

A. EXPERT OPINION

Nuclear non-proliferation experts have drawn different conclusions from the Iraqi experience, ranging from the need for a complete overhaul of the current non-proliferation regime to a belief that Iraq is an anomaly and that the I.A.E.A. is sufficient in its role as a primary non-proliferation actor. The latter view is held by Joseph Pilat, of the Los Alamos National Laboratory, who judges that the I.A.E.A. did its job well in Iraq, considering the limits of its duties. Pilat notes that I.A.E.A. safeguards are designed simply to prevent the diversion of nuclear materials from declared peaceful facilities to weapons purposes.[1] Since the Iraqis used undeclared facilities to create their own nuclear weapons material, the I.A.E.A. is not to blame for the indiscretions committed in Iraq. He acknowledges that the I.A.E.A. does not have a role in verification.

> The relation between the NPT and IAEA safeguards, and the fact that the IAEA has neither enforcement powers nor the ability to apply sanctions (other than reporting noncompliance to the Security Council and withholding technical assistance), limit the regime's verification

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[1] Joseph F. Pilat, "Iraq and the Future of Nuclear Nonproliferation: The Roles of Inspections and Treaties," Science, 6 March 1992, p. 1227.

> role. Indeed the entire regime is designed not for verification but rather, through its provisions for inspections, for confidence building and for demonstrating compliance... Iraq's behavior, then, clearly demonstrated that the regime has had certain limitations built into it that must be recognized and understood before sensible policy decisions can be made.[3]

Other experts, such as David Kay of the Uranium Institute, take the view that the I.A.E.A. has demonstrated that it cannot contribute to the non-proliferation regime through its inspection system. Kay contends that the United Nations, through its Special Commission and the Security Council, should assume control of the inspection and verification role. His judgements are analyzed in greater depth in the next section of this chapter.

B. INSTITUTIONS INVOLVED IN SOLVING THE IRAQI PROBLEM

1. I.A.E.A.:

The International Atomic Energy Agency was founded in 1957 with the dual purposes of containing the spread of nuclear weapons and allowing all nations to reap the benefits of peaceful nuclear technology. In 1970 the Non-Proliferation Treaty came into force, which increased the safeguard role of the I.A.E.A.[4] The safeguard system that was created by the I.A.E.A. and the N.P.T. received a serious blow to its

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[3] Ibid. p. 1227.

[4] Zachary Davis and Warren H. Donnelly, International Atomic Energy Agency: Strengthen Verification Authority, CRS Issue Brief, 21 January 1992, p. 1.

credibility when the extent of the Iraqi nuclear weapons program was revealed.

The Iraqis had at least ten nuclear weapons production sites, and most of these escaped the I.A.E.A.'s attention.[5] The primary reason most of these sites avoided the safeguards was that the sites were not declared. A nuclear site must be declared before the I.A.E.A. has the authority to inspect it. It was simple for Iraq to avoid detection by not declaring these sites, but that was not the only shortcoming that Iraq demonstrated in the I.A.E.A.'s safeguard role. There was also major nuclear weapons-related research and development taking place at least at one site that inspectors visited frequently: the Thuwaitha Nuclear Research Center.[6] There were some 15,000 employees working on nuclear weapons-related projects at this center, and this was not detected by the I.A.E.A.

The primary weakness in the N.P.T. is aptly described by David Kay, Secretary-General of the Uranium Institute, as the "NPT bargain."[7] The signatory nations, while agreeing to inspections, did not want these inspections to interfere with peaceful uses of nuclear energy. The nuclear weapons states (NWS) had to strike a bargain with the non-nuclear weapons

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[5] Zachary S. Davis and Warren H. Donnelly, Iraq and Nuclear Weapons, CRS issue Brief, 2 March 1992, p. 10.

[6] David Kay, Beyond Tunnels and Parking Lots: Controlling Nuclear Proliferation After Iraq, (London: The Uranium Institute, 1992), p. 1

[7] Ibid., p. 2.

states (NNWS) in order to ensure that these peaceful uses would not be hindered. The agreement was weakened by the concessions that had to be given to ensure that major NNWS would be signatories. This included the sharing of peaceful nuclear technology, materials, and equipment. Therefore, if a nation was able to bypass the safeguards without detection, the I.A.E.A. would supply it, unknowingly, with the materials it needed to produce nuclear weapons. In other words, the N.P.T. not only did not create a strong enough system to ensure that NNWSs could not acquire nuclear weapons undetected, it also created a situation in which it assisted NNWSs in reaching nuclear weapons goals. This combination was exploited by Iraq at a high level, and the result was an ambitious nuclear weapons program that escaped detection despite the huge amount of resources that was diverted to it.

If the I.A.E.A. is to contribute significantly to the correction of the Iraqi nuclear weapons problem, it is going to have to correct these weaknesses. The N.P.T. procedures contain a clause that allows the I.A.E.A. to inspect undeclared facilities, but the I.A.E.A. has "virtually" never had the political will to invoke it.[5] This clause allows the I.A.E.A. to request the right to inspect "suspect sites" for evidence of nuclear weapons progress, and if that request is

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[5] Lewis A. Dunn, Containing Nuclear Proliferation, Adelphi Paper No. 263, (London: International Institute for Strategic Studies, Winter 1991), p. 31.

refused the U.N. Security Council can be called into the matter. The I.A.E.A. must make use of this power in the case of Iraq, and in any other nations where nuclear weapons development is suspected. The linkage with the U.N.S.C. is vital, because this gives the I.A.E.A. a way of enforcing its provisions, since the agency has no method of enforcement on its own.

The issue of "political will" is one that must be discussed in more detail, since the argument may arise that if this "will" can not be generated by the member states of the I.A.E.A., then these states will not be able to muster it within a new regime controlled by the U.N.S.C. In order to assess the probability that this will be the case, it is necessary to analyze the origins of this lack of political will, which is inherent in the structure of the I.A.E.A. and the N.P.T. If member nations were to take advantage of the "suspect sites" clause, then any nation which was the target of such action might choose to withdraw from the N.P.T. regime. The terms of the treaty indicate that any nation may withdraw with only "three months" notice (Article X). If one nation chose to take this path, other nations that might be threatened by the exiting nation might choose to leave the N.P.T. regime as well. If this were to occur on a large scale, the regime, as it exists today, would be destroyed through defection.

The I.A.E.A. became actively involved in the post-war elimination of Iraq's nuclear weapons program with the approval of U.N.S.C. Resolution 687, which gave this body the authority to seize nuclear-weapons related materials in Iraq. The U.N.S.C. had to approve two more resolutions in order to force the Iraqis to comply with I.A.E.A. demands, because the Vienna body was incapable of enforcing the resolution itself.[9] On 12 July 1991, Hans Blix of the I.A.E.A. admitted that the Iraqis had progressed beyond the capabilities that the I.A.E.A. had believed they possessed. This discovery was months behind the 29 November 1990 intelligence report given to President Bush which stated that Iraq's nuclear weapons program was within six months to a year of success.[10] Five days later, on 17 July, Iraq became the first NPT signatory to be declared in violation of the I.A.E.A. safeguards agreement.[11]

The following week, on 26 July 1991, the I.A.E.A. declared that the Iraqis could not have possibly used the nuclear facilities they possessed for peaceful purposes, as Saddam Hussein had claimed.[12] The energy output of these

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[9] Pilat, p. 1225. The two resolutions referred to are 707 and 715.

[10] Davis and Donnely, Iraq and Nuclear Weapons, p. 14.

[11] Ibid.

[12] Ann Devroy, "Iraq Weapons Deadline expires Without Action," Washington Post, 26 July 1991. p. A:1.

facilities was less than that required to power them; therefore they could not logically be used to produce energy. The uranium enrichment level that the Iraqis had sought and obtained was also far above that required for peaceful purposes.

Although the I.A.E.A. had established that the Iraqis were developing nuclear weapons, the organization was still having difficulty tracking down the sites where these weapons were being developed. On July 31, Hans Blix informed the U.N. that there were still large portions of the Iraqi uranium enrichment program that had not been found through inspections, despite the fact that three inspections had taken place.[13] This led to the introduction of a proposed resolution by the French to the U.N. that would allow the use of force if the Iraqis did not cooperate fully with inspections. This was eventually passed as resolution no. 707 on 15 August 1991. Once again the I.A.E.A. was incapable of action without the support and assistance of the U.N.S.C.

At the I.A.E.A.'s 35th General Conference, in September 1991, it was declared that the Iraqis were still concealing nuclear weapons sites.[14] This statement was made after a fourth inspection had taken place, and again led to the passage of a U.N.S.C. Resolution, this time no. 715,

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[13] R. Jeffrey Smith, "U.N. Told of Iraqi Effort to Hide Nuclear Project," Washington Post, 31 July, 1992, p. A:1.

[14] Pilat, p. 1226.

designed to assist in the elimination of Iraq's nuclear weapons program.

These examples of the I.A.E.A. needing U.N.S.C. support and assistance even when international support is solidly behind its efforts demonstrate the primary weakness of the I.A.E.A.: its lack of an enforcement mechanism. This tends to reinforce the argument supported by David Kay, who was the team leader on many of the inspections inside Iraq, that the U.N.S.C. should take over the role of the I.A.E.A.

2. UNITED NATIONS SECURITY COUNCIL

The most important organization involved in the elimination of Iraq as a potential NWS is the United Nations Security Council. It took the forefront through the passage of the three aforementioned resolutions, 687, 707, and 715. According to David Kay, the United Nations Security Council is the organization that should be tasked with the mission currently done by the I.A.E.A.:

> ...[T]he Security Council now needs to take a forthright and clear stand that any further acquisition or attempted acquisition of nuclear weapons by any state will be considered by it as a threat to international peace and security under Chapter VII of the UN Charter to which the Council will respond with its own inspection and elimination programs. I can say from first hand experience that the knowledge that the Security Council stood behind the Iraqi inspections changed both the quality of the inspection and their outcome from what would have existed if they had only been carried out under the mandate of the IAEA- the inspectors realized this and, more importantly, so did the Iraqis.[15]

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[15] Kay, p. 4.

Another indicator of the power of the United Nations Security Council in the Iraqi case is the confidence that the I.A.E.A. inspectors have demonstrated when faced with Iraqi threats of violence. This resolve is directly related to the support that the U.N.S.C. has given these inspectors in this particular case. Without the U.N.S.C., the I.A.E.A. would be in the same position with Iraq that it was in before the Gulf War: The agency would have no means of enforcement, no "teeth." The U.N.S.C. possesses international power, such as sanctions, peacekeeping forces, and the ability to focus world opinion, that the I.A.E.A. clearly lacks.

C. PROBLEMS INTERNAL TO IRAQ

The first problem in Iraq that must be addressed is the destruction of all nuclear weapons production capability. There are ten known sites where nuclear weapons production takes place.[14] These sites were not all destroyed during the Gulf War by allied bombing attacks because intelligence did not know where they were located. This task, therefore, has fallen to the U.N. Security Council and the I.A.E.A. In order to facilitate this action, the U.N. has passed three resolutions: 687, 707, 715.

U.N. Security Council Resolution 687 was the document that officially ended the shooting war in the Gulf. It also

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[14] Timmerman, back cover.

required Iraq to stop all attempts at acquiring nuclear weapons, and to turn all nuclear weapons material over to the I.A.E.A.[17] This resolution was passed on 3 April 1991, and Iraq did not choose to honor the agreement. When it became obvious that the Iraqis were not going to reveal the location of their nuclear weapons facilities, the U.N. Security Council drafted a new document to ensure Iraqi compliance, Resolution 707.

Resolution 707 reiterated the goals of Resolution 687, and required the Iraqis to reveal the location of sites that had been previously hidden from U.N. inspectors. It also gave the inspection teams an "anytime, anywhere" capability in regards to suspected nuclear weapons locations.[18] This is the most intrusive regime any inspection team has ever been allowed in the search for nuclear weapons. This resolution also called for an end to all nuclear activities within Iraq, both weapons and energy-related.[19]

The final Resolution, 715, contains long-term solutions for the Iraqi nuclear problem in order to ensure that nuclear weapons research does not continue unabated after the

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[17] Pilat, p. 1225.

[18] Dunn, p. 32. The use of the "anywhere, anytime" clause was first proposed by the United States in regard to the Chemical Weapons Convention. It does not appear as if the chemical weapons application will be featured in the final draft of that treaty.

[19] Pilat, p. 1226.

U.N.S.C.- chartered teams leave Iraq. This resolution calls for the Director General of the I.A.E.A., Hans Blix, to create a system to monitor all Iraqi imports that may have nuclear weapons applications. Blix is also required to update the U.N.S.C. at least once every six months on actions regarding Iraq.[20]

These resolutions limit the nuclear programs of Iraq to a degree beyond that ever previously attempted with a sovereign nation. They are designed to ensure that Iraq cannot achieve the status of a nuclear-weapons state. These measures could not have been implemented without the worldwide support that the Iraqi aggression against Kuwait created. Because of these special circumstances, it will probably be very difficult to establish controls like the above resolutions on any other nation seeking nuclear weapons, unless that nation also raises the concern of the entire world via an aggressive action.

In order to determine the level of success that these resolutions may reach, the path that Iraq took to obtain nuclear weapons must be assessed. The single most conclusive piece of evidence found to date linking Iraq to nuclear weapons development is the progress report for the Al-Athir plant. This document was found in Baghdad in September

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[20] Ibid.

1991.[21] It described the intent and methods of Iraq's nuclear weapons program.

> The report... leaves no doubts about Iraq's intent. It describes efforts on a broad front to design and test components of a bomb similar to the device dropped on Nagasaki in 1945, but with a core made from enriched uranium rather than plutonium... Weapons experts... are impressed by what the report reveals about the level and range of effort the Iraqis were putting into the program.[22]

This report describes a project that was designed to mimic that used to create the bomb that was dropped by the United States on Nagasaki.[23] The Iraqis were able to conceal this project for such a long period of time because the imports needed to complete this project were not being monitored by the Nuclear Suppliers Group or the I.A.E.A., since the methodology used to create the Nagasaki bomb is considered "obsolete" and inefficient. These organizations were searching for more modern means of nuclear weapons production, and the imports needed for the "outdated" method used by the Iraqis were able to slip through the cracks. This reveals a weakness in the current non-proliferation regime: an inability to control dual-use exports, especially if the materials involved are not associated with modern nuclear

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[21] Jerry Gray, "Baghdad Reveals it had Plutonium of Weapons Grade," New York Times, 8 October 1991, p. A1. The progress report covered the period from 1 January to 31 May 1990.

[22] Colin Norman, "Iraq's Bomb Program: A Smoking Gun Emerges," Science, 1 November 1991, p. 644.

[23] Ibid.

weapons production. "Dual-use" refers to material that can be used for peaceful and nuclear weapons applications. The Iraqis claimed that they needed the materials necessary for their bomb program for peaceful end-purposes, including prosthetics for war veterans and construction of a petrochemical plant.[24]

In order to produce the radioactive material needed to power the bomb, the Iraqis also turned to an outdated method. One of two types of material is needed for the core of the type of nuclear weapon that the Iraqis were designing: plutonium or highly enriched uranium (the Iraqis depended primarily on highly enriched uranium). Both of these substances are monitored by the I.A.E.A., and neither one is produced in nature.[25] Therefore, Iraq needed to produce these substances clandestinely, in facilities not subject to I.A.E.A. safeguards. Iraq also needed to be able to import the materials necessary to enrich the uranium without arising suspicion. The Iraqi program depended upon calutron technology to accomplish this task.[26] This technology was used by the United States during World War II, and is extremely inefficient (it uses more energy than it creates).

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[24] Timmerman, p. 387.

[25] Leonard S. Spector, Going Nuclear, (Cambridge, Mass.: Ballinger, 1987), p. 336.

[26] Elaine Sciolino, "Iraq's Nuclear Program Shows the Holes in U.S. Intelligence," New York Times, 20 October 1991, p. A1.

Because of this inefficiency, the I.A.E.A. did not actively search for evidence of calutron production. Moreover, the technology needed to produce calutrons is so common, that it is practically impossible to monitor it, even if the I.A.E.A. had attempted to do so.[22]

The outdated methods Iraq attempted to use to build a nuclear weapon and to enrich uranium create a problem that the U.N.S.C. resolutions cannot solve on their own. The material used for both processes has become too common, and is therefore very difficult to trace. The I.A.E.A. cannot safeguard what it cannot find, and Iraq's nuclear program has been difficult to immobilize while U.N. inspectors have had the run of the nation. These difficulties will be magnified when these inspectors leave Iraq, regardless of new restrictions placed on that country by the U.N. The efforts of the I.A.E.A. and the U.N.S.C. should be augmented by the world's intelligence organizations as much as possible. Hans Blix has suggested that the nations of the I.A.E.A. reveal any intelligence they may have, on nations that are seeking nuclear weapons, to that organization.[23] This will be contingent, however, on the willingness of member nations to reveal intelligence findings and sources to the one-hundred-and-forty states that are signatories of the NPT.

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[22] Pilat, p. 1227.

[23] Paul Lewis, "Atomic Energy Agency Maps Plans to go After Nuclear Cheats," New York Times, 11 October 1991, p. A6.

Another area that must be addressed to ensure the elimination of the Iraqi nuclear weapons program is the presence of foreign nuclear technicians in that nation. The presence of foreign technicians dates back to the 1950s and 1960s, when the USSR assisted in the construction of a light water research reactor in the Thuwaitha desert.[29] The French began sending technicians following their 1974 nuclear cooperation agreement with Iraq.[30] The French agreed to send technicians to Iraq at that time to monitor the activities at the Osirak plant that the French assisted the Iraqis in constructing. These technicians had departed before the June 1981 Israeli air strike on that installation, a strike which convinced the rest of the world that Iraq's nuclear-weapons program was "dormant."[31]

D. PROBLEMS EXTERNAL TO IRAQ

In order to understand the uniqueness of the Iraqi situation, as well as to demonstrate the impact that regional considerations can have on the success of nuclear non-proliferation programs such as the elimination of Iraq's nuclear weapons program, it is necessary to discuss problems

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[29] Timmerman, p. 29.

[30] Leonard S. Spector, Nuclear Proliferation Today, (New York: Vintage, 1984), p. 169.

[31] Spector, Going Nuclear, p. 160. This statement was made in 1987 by Dr. Spector, one of the world's foremost experts on nuclear proliferation.

external to Iraq. This also demonstrates another weakness of the present I.A.E.A. regime: it can not affect external factors. Besides the transfer of nuclear weapons expertise to Iraq from foreign nationals, there is one primary external problem that is significant to the Iraqi situation: the instability of the Middle Eastern region. Even excepting the Desert Storm combatants, the Iraqis have been in a state of war with three nations in that region in the last dozen years (Israel, Kuwait, and Iran). Although Iraqi aggression is a primary cause behind all three conflicts, a stabilization of the region could reduce Iraq's desire to possess nuclear weapons.

Israel might be able to contribute to this stability. The Israelis have been a de facto nuclear power since the 1960s, according to some sources. These same sources indicate that the Israelis may have an arsenal of up to two hundred nuclear weapons.[2] As long as the Israelis are reportedly in possession of such a nuclear arsenal, some countries in the Arab world, including Iraq, are probably going to attempt to acquire a similar capability. A recent publication from the Nuclear Engineering International and the Uranium Institute has suggested creating regional nuclear weapons-free zones,

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[2] Spector, Going Nuclear, p. 130. According to Spector, it is believed that each of these weapons has a yield equal to that of the Nagasaki bomb, and that Israel is also in possession of Jericho missiles capable of delivering nuclear warheads up to 400 miles. That puts Iraq within range.

enforced by the I.A.E.A. and the U.N. It might be difficult to convince the Israelis of the merits of such a plan, however, given the constant threat that they face from the Arab world and their relative size disadvantage.

Saddam Hussein has made the Iraqi position clear since 1974, declaring that his nation would be the first that would acquire the bomb in the Arab world. In 1980, Hussein stated that the purpose of the Arab bomb would be the destruction of Israel.[13] These statements indicate the importance of Israel in Iraqi nuclear weapons decisions.

E. BARRIERS TO THE ELIMINATION OF IRAQ'S NUCLEAR WEAPONS PROGRAM

A number of barriers must be overcome if the Iraqi nuclear weapons program is to be permanently eliminated. The potential success of future U.N.S.C. actions as compared to possible I.A.E.A. efforts demonstrates an advantage in giving the U.N.S.C. more authority in the realm of nuclear proliferation prevention. The first of these barriers is the government of Iraq, led by Saddam Hussein. Hussein has given in grudgingly to all U.N.S.C. resolutions, and has at times had inspectors held at gunpoint in an effort to prevent them

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[13] John Simpson, Nuclear Non-Proliferation: Where do we go after Iraq, (London: The Uranium Institute, September 1991), p. 4.

[14] Spector, Nuclear Proliferation Today, p. 174-175.

from uncovering evidence of his nuclear weapons program. Saddam has three major stakes in preventing the destruction of this weapons program: His desired standing in the Arab world, maintaining face in his own nation, and a professed desire to eliminate the state of Israel from the face of the earth.[25] The actions of the Iraqi government have led the United States to threaten military responses twice since the conclusion of the Gulf War, and Saddam has backed down just prior to conflict on both of these occasions. The I.A.E.A. does not possess the capability to affect a nation's leader, such as Saddam, but the U.N.S.C. may have the ability to encourage the ouster of Saddam Hussein through the use of sanctions.

A second barrier confronting the forces attempting to remove Iraq's nuclear weapons capability is a lack of intelligence. The U.N.S.C. and the I.A.E.A. cannot destroy what they cannot find, and the Iraqis may not have revealed all their nuclear weapons facilities as of yet. The Middle East has always been difficult for Western intelligence assets to penetrate, and the size and extent that the Iraqi clandestine nuclear weapons program reached without being detected exemplifies this shortcoming.[26] Perhaps Israel's Mossad could be of assistance in this area, given its reputation of success in Middle East intelligence activity.

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[25] Timmerman, pp. 13-14.

[26] Kay, p. 1.

The U.N. may be able to create a multinational intelligence agency charged solely with the detection of nuclear weapons progress by NNWSs. Hans Blix of the I.A.E.A. has suggested an intelligence-sharing system for the I.A.E.A., but it would be limited by the willingness of its member nations to share intelligence with the other nations in the organization, both friends and foes.

A third barrier to the effectiveness of the international action to eliminate Iraq's nuclear weapons program is the infrastructure that is present in Iraq. Although the physical assets are being destroyed by the inspection teams, the human assets will remain. The Iraqi program did not depend upon foreign technicians to the degree first suspected; it relied upon foreign-trained Iraqi technicians. The head of the nuclear weapons program appears to be Dr. Jaffar Dhia Jaffar, who was educated in the United Kingdom.[7] These human assets will be able to attempt to rebuild the Iraqi nuclear weapons program after the U.N. leaves Iraq.

The final barrier that stands in the way of the removal of the nuclear weapons programs of potential new nuclear powers is the end of the Cold War. The nuclear umbrellas that were once extended by the United States and the Soviet Union may well be withdrawn. This could force the smaller nations of

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[7] Ben Sanders, "Developments of Concern for Horizontal Proliferation," Programme for Promoting Nuclear Non-Proliferation, Number 16, Winter 1991/92, p. 11.

the world, such as Iraq, to become more responsible for their own security, and the acquisition of nuclear weapons is one method, they tend to believe, that can be used to help enhance their national security. The U.N. may be able to reassure small nations of their security through the use of peacekeeping forces.

F. THE FUTURE OF THE IRAQI NUCLEAR WEAPONS PROGRAM

According to testimony by Robert Gates, Director of the Central Intelligence Agency, on 22 January 1992, once the U.N. delegation leaves Iraq, the Iraqis will be able to renew their quest for nuclear weapons.

> "In our opinion Iraq will remain a primary proliferation threat at least as long as Saddam Hussein remains in power," Mr. Gates said. He added that "the cadre of scientists and engineers trained for these programs will be able to reconstitute any dormant program rapidly,"... As for Iraq's nuclear weapons program, Mr. Gates said much of the infrastructure for the production of weapons-grade materials must be rebuilt before Iraq can produce nuclear weapons. But he added, "We measure the time required in a few, rather than many, years."[38]

These statements paint a grim picture about the success of the current U.N.S.C. action being taken in Iraq. How can the most intrusive nuclear weapons inspection regime in history be such a failure in the long run?

First of all, the current measures being taken in Iraq are temporary. Inspectors most likely will not be placed in Iraq

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[38] Elaine Sciolino, "Iraqis Could Pose a Threat Soon, C.I.A. Chief Says," New York Times, 16 January 1992, p. A9.

indefinitely. This is despite the fact that the United States, along with Hans Blix, has made a request for "open-ended," or permanent, inspections within Iraq.[1] An important factor preventing such open-ended inspections is Iraq's status as a sovereign nation, and despite the fact that it has shown blatant aggression it must be treated as such. Although the United Nations and I.A.E.A. will watch Iraq carefully for signs of a renewed nuclear weapons program, it must be remembered that the Iraqis successfully maintained a clandestine program for ten years prior to the Gulf War without alarming the West. In order to prevent the Iraqis from resuming nuclear weapons research a new regime must be put into place, or the old one upgraded.

A second reason for the expected failure of the U.N.S.C. and I.A.E.A. actions resides in the weaknesses of the I.A.E.A., already outlined in this chapter. If these shortcomings are not at least partially resolved, this body should be replaced or supplemented by a new regime. Moreover, the events in Iraq could have one of two effects on the ability of the I.A.E.A to prevent nuclear proliferation: one negative, and one positive. The negative effect is the lesson that other proliferating nations could learn from Iraq: that

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[1] Smith, p. A:28.

the only mistake Hussein made was starting a war six months before he had the bomb.[4]

This could lead to an evaporation of the I.A.E.A.'s credibility as an institution able to prevent nuclear proliferation, since Iraq was under full-scope safeguards. A weakening of the I.A.E.A. could directly lead to a more daring Iraqi nuclear weapons program after the U.N. resolutions have run their course. This weakening could also lead to an epidemic of nuclear proliferation among nations that had been deterred from pursuing these weapons by I.A.E.A. safeguards, an epidemic that could occur for two reasons. First of all, cheating nations would perceive that the I.A.E.A. is incapable of detecting any clandestine programs they may develop. Secondly, nations would be threatened by the belief that other nations were cheating, and therefore follow suit for fear of being overwhelmed by potential nuclear enemies. Both of these factors demonstrate the necessity for an effective non-proliferation regime to be sustained, either through the I.A.E.A. or in place of it.

The positive effect that could develop, and has to some degree developed, from the Iraqi incident is the galvanizing of world opinion about the dangers of nuclear proliferation. This could create the political atmosphere necessary for the addition of more stringent safeguard measures to the N.P.T.,

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[4] Kay, p. 1.

as well as for the widening of the U.N.'s authority in this area. Due to the desires of NNWSs to avoid "defeated powers" status, this authority may not expand enough to prevent nuclear proliferation from increasing, however.

> The Iraqi experience could also help to promote certain technologies, techniques , and procedures, for example, aerial inspection, thereby establishing a strong rationale for their place in the new arms control panoply. Yet, as suggested, neither the highly intrusive inspections or the continuous monitoring regime as applied to Iraq is likely to have a place per se in future bilateral, regional, or international accords without significant qualifications and conditions. Parties are not likely to accept instruments that treat them as 'defeated powers,' with all that such treatment allows in terms of access. The United States could not accept such an approach either constitutionally or as a matter of U.S. national security policy. It may be possible to strengthen future arms accords substantially, but there will always be limitations as long as the accords are based on mutual agreement among sovereign states.[41]

This brings up a third reason why it is believed that the Iraqi nuclear weapons program will continue after the inspection teams leave Iraq: Lack of a U.N.S.C. role in day-to-day nuclear proliferation problems. The U.N.S.C. has the authority and the ability to enforce non-proliferation laws, but in the present regime the actions of the U.N.S.C. in Iraq are the exception rather than the rule.

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[41] Pilat, p. 1228.

III. THE PROBLEM OF SUPPLY: A EUROPEAN STANDPOINT

The defeat of Iraq in the Gulf War by the United Nations coalition in February 1991 has brought to light a problem that has immense consequences within the NATO community: The contributions of NATO nations to the nuclear weapons program of Iraq. Published reports suggest that at least four nations share some of the responsibility for Iraq's progress in nuclear proliferation: France, Germany, the United States, and Italy.

The problems that an Iraqi nuclear arsenal could create for NATO, as well as the rest of the world, are many-fold. First, Iraq is in a highly unstable region, as evidenced by the Iran-Iraq War, the Gulf War (which both, incidently, were initiated by Saddam Hussein), and the continuous religious turmoil that dominates it. This increases the chances that the "... uncertainties of military decision making in the emerging nuclear states [such as Iraq]... may some day lead to nuclear confrontation."[4] The internal instability, as well as the current leadership, lead to a second cause of concern. "The spread of nuclear weapons also increases the danger that nuclear arms may fall into the hands of radical, anti-status

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[4] Leonard S. Spector, Going Nuclear, p. 4.

quo forces as the result of war, revolution or coup d'etat."[43] The Iraqi situation is one with the radical leader already in place due to a coup, and he is attempting to obtain weapons of mass destruction in order to upset the status quo in his favor. A third and final problem that NATO must confront is that "The spread of nuclear weapons is also increasing the likelihood of conventional war, as governments have been tempted to strike preemptively against the nuclear installations of potential adversaries."[44] This combination of factors leads to the conclusion that nuclear weapons in the hands of Iraq would represent an extremely unfavorable situation if international stability is a desired goal.

A. BACKGROUND

This problem was brought to the forefront of international news following Iraq's defeat in the Gulf War.

> At the end of the Gulf War Security Council Resolution 687 demanded that Iraq should help the UN remove or destroy all its nuclear-weapons equipment... Iraq accepted this resolution unconditionally.[45]

This allowed for a series of UN inspections, the first being in May 1991 at the two nuclear research reactors at Tuwaitha. These had previously been inspected by the

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[43] Ibid.

[44] Ibid, p. 5.

[45] "Iraq's Nuclear Enigma," The Economist, 13 July 1991, p. 43.

International Atomic Energy Agency through provisions of the Non-Proliferation Treaty. "At the same time, however, the team visited a nearby site and a site at Tarmit... they found evidence of a huge and hitherto unobserved uranium-enrichment programme."[46] A second inspection occurred at Al Gharaid on 22 June 1991. This time inspectors were held up by Iraqis for a period of time. During this period of time they saw equipment being removed. When they gained entry, the equipment was gone. At a third inspection, "In an incident on June 28 [1991], Iraqi soldiers fired over the heads of U.N. inspectors filming the hasty withdrawal of equipment from a military transportation base near Baghdad."[47]

On 8 July 1991, Iraq "... disclosed to the United Nations details of an extensive, largely secret nuclear development program that the United States charged today is capable of producing atomic weapons."[48] This program was as attempt to enrich uranium, a prerequisite in the development of nuclear arms. On the fourteenth of the same month, "Iraq gave the United Nations a new list of clandestine nuclear installations..."[49] Then, on 5 August 1991 Iraq revealed

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[46] Ibid.

[47] Ann Devroy, "Iraq Gives Information to UN on Extensive Nuclear Program," N.Y. Times, 9 July 1991, p. A1.

[48] Ibid.

[49] Paul Lewis, "Baghdad Hands U.N. a New List of Clandestine Atomic Installations," N.Y. Times, 15 July 1991, p. A5.

"... that its scientists were secretly able to extract a small amount of plutonium, suitable for making an atomic bomb, from spent fuel at a nuclear installation whose operations came under international safeguards..."[50] On 24 September 1991, in an attempt to discover the identity of the individual who masterminded the program, a U.N. team raided the Record Center of the Iraqi Atomic Energy Commission. Two weeks later, on 7 October 1991, U.N. inspectors "... discovered a complex of buildings that apparently served as the nerve center of President Saddam Hussein's covert nuclear weapons program but largely escaped allied attack during the Persian Gulf war."[51]

These investigations "... uncovered a nuclear program far grander in scope, more sophisticated in design and much further along than was suspected in Washington."[52] It now appears that the Iraqis were much further along than was suspected prior to the U. N. inspections.

> Iraqi informants have told U.S. intelligence of a clandestine electromagnetic process Baghdad was using to separate weapons-grade material. The process has already produced about 90 pounds of uranium, some of it highly enriched. That's enough to make a bomb...[53]

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[50] Jerry Gray, "Baghdad Reveals it had Plutonium of Weapons Grade," New York Times, 5 August 1991, p. A1.

[51] Paul Lewis, "U.N. Aides Discover Atom Arms Center Concealed by Iraq," p. A1.

[52] Elaine Sciolino, "Iraq's Nuclear Program Shows the Holes in U.S. Intelligence," p. E5.

[53] "Iraq's Nuclear Menace," New York Times, 11 July 1991, p. A14.

This finding runs counter to what the international community believed up until this revelation.

> Before the war, Iraq was judged to be 5 to 10 years away from a full-fledged nuclear arsenal and bomb-making capability. The more imminent threat came from 100 pounds of known weapons-grade material that was checked periodically by international inspectors; by worst-case assessment, it could have been turned into a bomb in a year or less.[54]

In addition to the uranium, Iraq has admitted to extracting three grams of plutonium from spent fuel. This is significant because the amount of plutonium needed to make an atomic bomb is much lower than the amount of uranium it would take to make a bomb of the same destructive capability. "Mr. Leventhal said about eight kilograms of plutonium- which can be chemically separated from spent fuel from a research or production reactor- are needed to make an imploding nuclear device, compared with about 25 kilograms of highly enriched uranium."[55] On top of all this, the Iraqis are apparently also pursuing hydrogen bomb technology. Although Iraq was still apparently several years from the hydrogen bomb, this creates an even more dangerous situation because this type of bomb can be much more destructive than the atomic bomb.

The basic defense that the Iraqis have used in the international arena concerning their nuclear programs, is that all this research has been for peaceful energy purposes. "...

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[54] Ibid.

[55] Jerry Gray, "Baghdad Reveals it had Plutonium of Weapons Grade," p. A1.

Iraqi Foreign Minister Ahmed Hussein did not admit to a weapons program but instead contended that Iraq's nuclear program is devoted for peaceful purposes."[56] There are three factors to examine to decide the validity of this defense: the materials needed; the processes required; and the capital equipment that each must have.

On the material side, there are two paths to nuclear weapons: uranium and plutonium. There are two types of uranium, U-235 (light) and U-238 (heavy). Although the natural state of uranium is 0.7% light and 99.3% heavy, in order to use uranium for weapons purposes it must be enriched to 90% light or more. Much of the uranium found in Iraq has been enriched to this level. This brings a question into focus: why have the Iraqis enriched their uranium in this way? "Because highly enriched uranium is sometimes used to fuel research reactors, a nation can have legitimate reasons for obtaining small quantities of this material, despite its usefulness in nuclear explosives."[57] The uranium enrichment necessary for use in power reactors is only 3%, however. Another factor to consider is that "... developing a sizable independent uranium enrichment capability is economically justifiable only for nations with large domestic nuclear power

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[56] John M. Goshko, "Iraq Gives Information to U.N. on Extensive Nuclear Program, " N.Y. Times, 9 July 1991, p. A1.

[57] Leonard S. Spector, Going Nuclear, p. 328.

programs or significant potential export markets."[58] Therefore, the material involved refutes the argument that Iraq's nuclear research is for peaceful purposes only.

The capital equipment and processes used in the nuclear program also counters the Iraqi claim of peaceful motives. The Iraqis employ the calutron method to enrich their uranium; they had thirty of these, plus ninety more ready to be on line in six to eighteen months.

> The main attraction [of the Iraqi enrichment program] used technology all but forgotten among nuclear sophisticates, but adequate for the task if its inelegance, inefficiency and costliness can be borne. In a calutron, beams of charged uranium atoms pass through a magnetic field. The magnetic field bends the trajectory of the lighter atoms of U-235 more than it does that of the heavier U-238... Calutron enrichment costs far too much to make sense in a civil nuclear programme.[59]

To be more precise, "... To make a single gram of enriched uranium by the electromagnetic approach would require five times the energy likely to be retrieved from that gram..."[60] Logic dictates that the only use for this enrichment, therefore, is in weapons production.

The Treaty on the Non-Proliferation of Nuclear Weapons, or NPT, is the tool by which the International Atomic Energy Agency has attempted to prevent nations like Iraq from

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[58] Ibid.

[59] "By-Ways That Lead to the Bomb,"The Economist, 20 July 1991, p. 101.

[60] Frank Prial, "U.N. Inspectors Report Iraq Still Conceals Atom Program," New York Times, 16 July 1991, p. A6.

acquiring nuclear weapons. It prohibits non-nuclear weapons states from acquiring or creating nuclear explosives, places safeguards on their nuclear actions, and prevents nations that deploy nuclear weapons from transferring that ability to nations without that capability. The treaty also states that nations that have already obtained peaceful nuclear technology should share it with nations that lack that technology. This is in order to appease non-nuclear nations and entice them to sign the document. The treaty authorizes inspections of the facilities of signatory nations that are importing nuclear material or have constructed nuclear plants. It also places safeguards on the importation and exportation of nuclear material and technology, as this reproduction of Section 2 of Article III of the Non-Proliferation Treaty attests.

> Each State Party to the Treaty undertakes not to provide: (a) source or special fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to the safeguards required by this Article.[61]

The NPT has a series of weaknesses, however. The first of these is that there are limits to the facilities that are subject to inspection by the IAEA. In order for said facilities to be subject to inspection, they must be declared by the host nation. Secondly, a country is permitted to

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[61] J. Simpson, The 1990 NPT Review Conference: context and issues, (London: The Uranium Institute, 1991), p. 75.

obtain all the necessary material and equipment for the construction of an atomic weapon under the terms of the treaty, as long as these components are not assembled into the completed weapon. Article II of the NPT specifies the prohibitions on non-nuclear weapon states, and only the acquisition or manufacture of nuclear weapons themselves, not the components, is mentioned.

> Each non-nuclear-weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.[62]

This enables nations to get dangerously close to weapons production and still remain within the legal confines of the treaty. A third weakness is that a nation can opt out of the treaty with the 'supreme interests' clause, Article X.

> Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the exraordinary events it regards as having jeopardized its supreme interests.[63]

Iraq seemed to be taking advantage of the above weaknesses in its bid for nuclear weapons: acquire the materials

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[62] Ibid.

[63] Ibid., p. 79.

necessary, not declaring those which were illegal under the auspices of the treaty, then invoking the 'supreme interests' clause and assembling the weapons. What consequences would the Iraqis have to face under the treaty for such an action, or for an even more blatant violation? This question brings up a fourth weakness present in the treaty: a lack of teeth. There are no provisions for punishment under the NPT for any violation.

Present means of intelligence and reconnaissance were proven by the Iraqi case to be insufficient to stop the spread of nuclear weapons. A number of shortcomings must be addressed in order to understand how Iraq achieved the level that it did without generation concern. First of all, since the technique used was not expected by the monitoring powers, many of the imports that Iraq obtained did not arouse suspicion. The aforementioned calutron method is "... relatively easy to build. They use few exotic materials, in principle allowing them to be largely constructed without Western aid."[4] This shows a weakness in intelligence, since it was not discovered that this method was being used, and translates into a weakness in reconnaissance because all such activity was focused on searching for signs of more modern methods. A second shortcoming that became apparent was a lack of assets devoted to the problem.

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[4] William J. Broad, "Iraqi Atom Effort Exposes Weakness in World Controls," New York Times, 15 July 1991, p. A1.

> ...[T]he C.I.A. had only one technical analyst responsible for examining Iraq's nuclear program before the August 1990 invasion of Kuwait, and he had to monitor Japan as well. The Defense Intelligence Agency had only two analysts assigned to Iraq, but 42 to issues relating to Americans missing in action in Southeast Asia... satellites that had been devoted to the Iran-Iraq border in the mid-1980's to help Iraq in its war against Iran were shifted back to the Soviet Union once the war was over.

This lack of insight into Iraqi methods and failure to use available assets led to an inability for intelligence and reconnaissance to succeed in the detection of Iraqi nuclear achievements.

Iraqi nuclear achievements were helped a great deal by NATO nations in two specific time periods: Prior to the 1981 Osirak raid and between that raid and the 1990 Iraqi invasion of Kuwait.

B. PRE-OSIRAK PERIOD

Prior to the raid on Osirak, France was the primary contributor. These contributions began in 1974, when the two nations signed a nuclear cooperation agreement.

> Under the agreement, France was to supply Baghdad with a large reactor and help build the Tuwaitha center into a 'nuclear university' capable of training some six hundred scientists and technicians. In return, Iraq reportedly promised to buy French arms and to assure France a long-term supply of oil.[xx]

[xx] Elaine Sciolino, "Iraq's Nuclear Program Shows the Holes in U.S. Intelligence," p. E5.

[xxi] Leonard S. Spector, Nuclear Proliferation Today, p. 166.

This final sentence brings to light one of the two reasons why France gave so much nuclear aid to Iraq during this time period: France is dependent on imported oil. The other reason is that France was one of only two nations with nuclear weapons that had not signed the NPT, the other being China. (Israel, India, and South Africa may also fall into this category, but they do not publicly admit that they have nuclear weapons, although it is believed by some observers that they do; India has exploded a "peaceful" nuclear device, and it is believed that South Africa has exploded a nuclear weapon.) In August 1976 France and Iraq signed a sales contract for a forty-megawatt and an eight-hundred-kilowatt testing reactor, Isis and Osirak, to be constructed by France in Iraq. The international reaction was not long in coming:

> ...[W]ithin months after the signing of the August 1976 sales contract for the plants, Israel, the United States, and several European governments protested to France. They were alarmed that the reactors were to be fueled with highly enriched uranium that could be directly used for nuclear weapons. France had offered to provide Iraq with seventy-two kilograms initially, enough to fuel the reactor for a year- or to produce several nuclear bombs. If Iraq elected to disregard the International Atomic Energy Agency safeguards covering the material and had prepared the necessary non-nuclear components of nuclear weapons in advance, the highly enriched material could give it a small nuclear arsenal in a matter of weeks.[88]

Osirak gave the Iraqis the capability to produce ten kilograms of plutonium a year. In 1978, the French gave into

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[87] Within the last year, China, France and South Africa have all become signatories of the Non-Proliferation Treaty.

[88] Spector, Nuclear Proliferation Today, p. 167.

international pressure and attempted to convince the Iraqis to accept an alternative fuel known as caramel, which was only enriched to a level of 7% and was hence unusable for nuclear weapons. The Iraqis claimed that this fuel was unproven as a suitable substitute, despite the fact that it had been tested as such, and demanded weapons-grade fuel. This has since been taken as proof that the Iraqis were seeking nuclear weapons at this time.

> France ultimately gave in to Iraqi demands, announcing its decision in March 1980. In the negotiations, however, Iraq accepted three important additional safeguards to prevent any misuse of Osirak and its fuel. First, France would not supply all seventy-two kilograms of fresh highly enriched uranium at once, but would transfer it in stages, as it was needed, so that no more than twenty-four kilograms (enough to load Osirak and reload it once) would be in Iraq at any time. Spent fuel would be returned promptly to France. Although twenty-four kilograms would easily be enough for one nuclear device, half of the material would normally be in use in Osirak and highly radioactive, making it unsuitable for weapons without extensive processing.[67]

The second safeguard involved the pre-irradiation of all highly enriched fuel, which would make it difficult to transfer without shielding and other precautions. The final safeguard was the placement of French technicians at Osirak through 1989, to ensure that clandestine activities did not take place. These safeguards did not appease the international fear about supplying Iraq with enriched uranium, but they did reduce the risk presented.

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[67] Ibid. p. 169.

German contributions in this time period were associated with the firm NUKEM:

> ... Iraq attempted to obtain fabricated depleted uranium fuel pins directly from NUKEM. Iraq reportedly claimed the pins were being purchased for use in a yet-to-be-built training reactor. A more likely reason in the eyes of some experts, particularly since Iraq is not known to have had such a training reactor on order, was that the pins were intended to be inserted into Osirak and that Iraq was seeking to avoid the necessity of fabricating the pins itself. NUKEM tried to subcontract portions of the job to Canadian and American firms reportedly without disclosing the ultimate destination of the finished product. When U.S. and Canadian regulatory officials looked into the matter, they discovered this and the contract went no further.[70]

This appeared to be a covert operation, of which the German government had no knowledge.

The United States played the watchdog during this period. By protesting the French transfer of nuclear material to Iraq, the U.S. managed to reduce the threat presented by insisting on the aforementioned safeguards. The U.S. was also instrumental in blocking the export of the fabricated depleted uranium pins by NUKEM to Iraq. Furthermore, the United States attempted to dissuade the Italians from selling nuclear equipment to the Iraqis. Hence, the U.S. prevented the Iraqi nuclear menace from being a threat at an even earlier date, at least in the 1970s and early 80s.

The Italian contribution was second only to France in magnitude:

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[70] Ibid., p. 173.

Parallelling its dealings with France in 1976, Iraq purchased from Italy five laboratories for the Tuwaitha center, including three hot cells, lead shielded rooms with remote-handling equipment for examining and processing radioactive materials. U.S. officials believed that if Iraq produced plutonium by irradiating unenriched uranium targets in Osirak, the hot cells could separate enough plutonium for approximately one nuclear device per year.[71]

The laboratories also gave the Iraqis the ability to manufacture plutonium. Italian motives were much the same as the French ones; they had a high dependence on imported oil, and Iraq guaranteed this in return for Italy's nuclear trade. The Italians also, in 1980-81, educated Iraqi technicians in Italian schools and began to negotiate for the construction of a reprocessing plant. Furthermore, in 1980, the Iraqis purchased six tons of depleted uranium and four tons of yellowcake from Italy.[72]

There were many efforts made by illegal means to slow down the nuclearization of the Iraqi military prior to the raid on Osirak. "In April 1979, the core structures for Osirak and the smaller Isis reactor were destroyed by a bomb planted in a warehouse in Seine-sur-Mer, France, where the equipment was awaiting shipment to Iraq."[73] Although this has never been proven, it is suspected that the Israelis were responsible. The French eventually rebuilt the cores and sent them at a later date. "This incident was followed in June 1980 by the

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[71] Ibid., p. 170.

[72] Ibid., p. 172.

[73] Ibid., p. 176.

murder of Dr. Yahya el-Mashad, an Egyptian nuclear scientist working for the Iraqi Atomic Energy Commission."[74] Once again it is believed that Israel was involved, although this has never been proven.

> Two months later, a series of bombings occurred at the residences or offices of several officials of Iraq's key nuclear suppliers: SNIA-Techint, the Italian company supplying the hot cells to Iraq; its partner in the sale, Ansaldo Mercanico Nucleare; and Techniatome, the French government-owned subsidiary supplying the Osirak reactor. In addition, officials and workers in these and several other French and Italian companies received threatening letters from the Committee to Safeguard the Islamic Revolution, warning them to stop their work on Iraq's nuclear program.[75]

On 7 June 1981, the Israelis launched an attack upon the reactor at Osirak. Two F-16s destroyed the reactor in a bombing raid. At the time, and for many years to come, it was believed that this attack had a decisively debilitating effect upon the Iraqi nuclear weapons program. "Iraq's nuclear program has been dormant since Israel's 1981 bombing raid destroyed its centerpiece, the large French-supplied Osiraq research reactor outside Baghdad."[76] This statement was made by Leonard Spector, one of the foremost experts on nuclear proliferation in the world, in 1987, just three years prior to the Gulf war. Obviously the raid did not have the effect that most experts attributed to it, but it did bring the world's

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[74] Ibid., p. 176.

[75] Ibid., pp. 176-77

[76] Spector, Going Nuclear, p. 160.

eyes to bear upon the Iraqi nuclear program. This had two effects, the first of which was a slowdown in the transfer of nuclear weapons equipment, material, and technology to Iraq, although this was a short-term change in many cases. The second effect, unfortunately, was that the Iraqis learned that the only way for their program to succeed was to shroud it in deep secrecy.

C. OSIRAK TO DESERT STORM

The French acted quickly after the raid to disassociate themselves from the Iraqi nuclear program, announcing a termination of their nuclear assistance to Iraq immediately after the raid on Osirak.[77] Within months, however, the French had shifted their position and made an agreement with Iraq to rebuild Osirak. The French had decided to include more powerful safeguards, however.

> France revealed the specific terms of its plan early in 1982. Iraq would have to accept low-enriched caramel fuel for the plant; French technicians would remain at the site permanently; and in addition, Iraq would have to include other states in the operation of the installation, making it a regional research center.[78]

The Iraqis did not give an immediate answer to this proposal, but no work was ever done to reconstruct the plant. This apparently ended French involvement in the Iraqi nuclear-weapons program.

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[77] Spector, Nuclear Proliferation Today, p. 183.

[78] Ibid., p. 183.

The Germans had no significant policy reaction to the raid, since the German government had no formal ties to the Iraqi nuclear program. In the latter portion of the 1980s, however, there were a series of transactions involving German firms:

> Secret investigation documents of the FRG Economics Ministry show that several companies were involved in Iraqi nuclear projects. Investigations are currently being conducted into the companies H. and H. Metalform, Inwako GmbH, Interatom, Export-Union Duesseldorf, and Sitico GmbH, among others... H. and H. Metalform assisted Iraq in their quest for centrifuge technology. Inwako was involved with the shipping of ring magnets that were necessary for calutron operation. Interatom GmbH transferred technological know-how in the field of nuclear technology to the Iraqis. Finally, Sitico GmbH shipped enriched uranium to the Iraqis without the proper permits.[49]

The U.S. reaction to the raid was to initiate an investigation into Israeli allegations that the Iraqis were covertly producing nuclear weapons, and the vehicle for this investigation was the Senate Committee on Foreign Relations. This body came to the conclusion that, although the capability to build nuclear weapons was present, it was highly improbable that the Iraqis had reached an advanced point in their development, given the presence of French technicians at the nuclear research facilities.[50] These technicians were placed at these positions to make it more difficult for Iraq to divert nuclear material meant for peaceful means to weapons

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[49] "More Companies Investigated," F.B.I.S., 22 October 1991, pp. 10-11.

[50] Spector, Nuclear Proliferation Today, p. 390.

use, and a U.S. Senate Committee concluded that the technicians were successful in their mission. Given the subsequent developments in mid-1991 that revealed the Iraqi ability to overcome such safeguards, it is possible that this judgement was overly optimistic.

U.S. involvement went beyond merely passing judgement on others during the decade of the 1980s, however. During 1989, the New Jersey firm Consarc was in the midst of arranging a deal with Iraq to sell it high-temperature furnaces, which were designed solely for use in melting zirconium, a material needed for the coating of uranium rods, a procedure necessary in the development of nuclear weapons. The firm informed the Commerce Department that these furnaces could be used for nuclear weapons development, but Commerce approved the sale. Eventually the Pentagon interceded, and the sale was blocked.[51] Also during the latter part of the 1980s, the U.S. exported a half a million dollars worth of computers to Iraq, which could have been diverted to nuclear weapons development.[52]

The Italians followed the French example, and advised the United States that they did not intend to offer additional

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[51] Gary Milhollin, Licensing Mass Destruction: U.S. Exports to Iraq: 1985-1990, (Washington: Wisconsin Project on Nuclear Arms Control, 1991), p. 11.

[52] Ibid., p. 5.

nuclear equipment to Iraq.[33] Unfortunately, the similarity did not end there, and the Italians were later implicated in nuclear-related dealings with Iraq, similar to the French turnaround of 1981.

> According to evidence obtained in a 1984 Italian prosecution, senior Iraqi military figures expressed interest in obtaining 33.9 kilograms (74.6 pounds) of plutonium- enough for several weapons- from an Italian arms smuggler ring purporting to have the material for sale... The deal fell through when, after a third meeting in Baghdad, the smugglers were unable to produce samples of the nuclear material.[34]

This was different from the French case in that the Italian government apparently did not sanction the move, but it was similar because neither action got past the bargaining phase.

D. THE NUCLEAR SUPPLIERS GROUP

The Nuclear Suppliers Group was established in 1978 as a reaction to the 1974 Indian nuclear test.[35] The Indians had exploited assistance from the United States and Canada into the ability to create what they deemed a peaceful nuclear explosion, and this concerned the international community sufficiently to establish an export control regime. This body, along with individual governmental internal regulation, is the most vital tool in the effort to stop a repeat of the

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[33] Spector, Nuclear Proliferation Today, p. 183.

[34] Spector, Going Nuclear, p. 163.

[35] Joseph S. Nye, Jr., "New Approaches to Nuclear Proliferation Policy," Science, 29 May 1992, p. 1294.

nuclear export problem associated with Iraq. The provisions in the agreement required the state receiving nuclear exports (materials, equipment, technology) to: pledge not to use them for the manufacture of nuclear explosives, accept open-ended safeguards on all nuclear imports, provide sufficient security against theft and/or sabotage, agree not to transfer these imports to a third party without the original exporter's agreement, employ restraint with sensitive items, and encourage multilateral regional processing and enrichment facilities.[45]

The Iraqis, and some of the exporters that contributed to Iraq's attempted nuclear build-up, violated some of the above guidelines, except the final one regarding regional facilities, during the 1980s. Although the creation of the Nuclear Suppliers Group demonstrated that the international community understood the need to control exports that could have nuclear weapons applications, the ease with which the Iraqis bypassed these guidelines illustrates the need for more stringent rules and enforcement. The export control system has since been updated. The most prominent example of this is the April 1992 Nuclear Suppliers Agreement which added sixty-five dual-use items to the list of exports which cannot be shipped unless certain conditions are met. One of these

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[45] Leonard S. Spector and Jacqueline R. Smith, Nuclear Ambitions: The Spread of Nuclear Weapons 1989-1990, (Boulder: Westview Press, 1990), p. 435.

conditions is that full-scope safeguards must be applied to the nation that is receiving the item. Actions such as this are vital if the spread of nuclear weapons is to be slowed or halted.[5]

[5] David Albright and Mark Hibbs, "Iraq's Quest for the Nuclear Grail: What can we Learn," Arms Control Today, July/August 1992, p. 9.

IV. THE STRATEGIC CULTURE OF IRAQ

Before addressing the strategic culture of Iraq, it is necessary to define strategic culture. For the purposes of this thesis Yitzhak Klein's definition will be used:

> Strategy is a goal-oriented endeavor, involving the pursuit of a political objective through the use of force. Our purpose is to examine how strategic culture influences this goal-oriented activity. From this stems our definition of strategic culture: "the set of attitudes and beliefs held within a military establishment concerning the political objective of war and the most effective strategy and operational method for achieving it."[88]

This definition is appropriate to the Iraqi case because the military establishment is very much in control in Iraq, and historically the military has maintained a very strong role. In order to determine the attitudes and beliefs held by this establishment, many factors will be examined. First of all, the history of the area that has become the Republic of Iraq will be discussed. This will include a study of Iraq from the time that Mesopotamia was the "cradle of civilization," through the coming of Islam, continuing with the Mongol invasion, the Ottoman empire, colonial British rule, the British-imposed monarchy, and the revolution of 1958 that eventually led to Ba'th Party rule.

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[88] Yitzhak Klein, "A Theory of Strategic Culture,", Comparative Strategy, Vol 1, 1991, p. 5.

A second factor that will be discussed is the demographics of Iraq. Power has been held in the hands of the Sunni minority since the fall of the monarchy in 1958, even though Iraq is the only Arab state that has more Shi'a than Sunni Muslims. The Sunni leadership must also face the Kurdish people in the north, a nation which shares the Sunni faith, but feels that it has closer ties to Kurdish peoples in other countries (such as Turkey) than to the central government of Iraq. Indeed, the Kurds would like to establish an independent nation-state of Kurdistan. There are also a few Christians and Jews in Iraq, with little political influence.

Next, regional considerations will be examined. In the case of Iraq, this topic cannot be discussed without including Iran and Israel. Iran is important because of its relative size, resources, and proximity, and because of its hostility towards Iraq. These two nations concluded a bloody eight-year war in 1988, and the historical Arab-Persian animosity remains, as it has for centuries. Israel, for religious and other reasons, has been a target of most of the Arab world since that state's inception in 1948, and Iraq, under Saddam Hussein, has taken a special interest in the destruction of Israel. Given the fact that Israel reportedly has a significant nuclear arsenal[3], any action that Iraq might

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[3] Leonard S. Spector, Nuclear Ambitions, p. 6.

take in pursuing the destruction of Israel could have dire consequences.

Finally, the Ba'th party and the man that currently heads it, Saddam Hussein, will be discussed. The nationalist-socialist Ba'th party has been in power in Iraq since 1963, after a series of political upheavals, including the revolution of 1958, placed it in a position to gain control. The party has its genesis in Syria in 1944, and was founded by Sunni Muslims and Christians. Since Saddam Hussein came to power in 1979 at the head of this party, he has led his nation with an iron hand. In the present context, he alone determines his nation's policy. No other individual has the power to dispute his decisions. Therefore, an understanding of this man's thinking is necessary in an analysis of the strategic culture of Iraq today. His intense desire to fulfill his self-declared destiny of repeating the accomplishments of Nebuchandnezzar, the biblical king of Babylon who enslaved the Jews, has a strong effect on Iraqi policy towards Israel.[1]

An analysis of the effects of each of these factors should provide a deepened understanding of the strategic culture of Iraq, and assist in determining the future of Iraq with regard to its nuclear weapons program. The conclusion will include an analysis of the probable future of Iraq's nuclear weapons

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[1] Timmerman, pp. 13-14.

program, in view of the facts derived from the strategic culture study.

A. PRE BA'THIST HISTORY

The area that is currently known as the Republic of Iraq was created by the British in 1921, out of what had previously been three different Ottoman provinces: Basra, Baghdad and Mosul.[1] Although this is the beginning of modern Iraq, in order to understand the country it is necessary to recall the ancient region of Mesopotamia, often referred to as the land where civilization first began. Mesopotamia, a name which translates to the land between the rivers, was first settled in 6000 B.C. and is located in the basin between the Tigris and Euphrates rivers.[2] This location was both a blessing and a curse to its inhabitants; the rivers supplied enough fresh water to make the region one of the most fertile in the Middle East, but their propensity to flood violently enough to destroy entire villages made life in this area a risky proposition at best. Once irrigation was introduced to this region, however, civilizations began to develop. The first of

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[1] Amatzi Baram, Culture, History and Ideology in the Formation of Ba'thist Iraq, 1968-1989, (New York: St Martins, 1991), p. 1.

[2] Helen Chapin Metz, ed., Iraq: A Country Study, (Washington: U.S. Government, 1990), p. 3.

these was the city of Sumer, founded in approximately 3000 B.C., and it was followed by Babylon and Assyria.[13]

One after the other these three cities, Sumer, Babylon, and Assyria, dominated the region. Sumer was indigenously ruled until roughly 2400 B.C., when a series of military conquests began which still have an effect upon the strategic culture of Iraq, as well as the rest of the Arab world. The first of these conquests was led by Sargon I, from the city-state of Akkad in northern Mesopotamia, and was followed two hundred years later by the reign of the Guti. The Guti, a mountain people from the East, were overthrown by the Sumerians in roughly 2100 B.C. By 2000 B.C., however, Sumer was no longer a major force, and Babylon began to achieve preeminence.

Babylonian power would last until 1600 B.C., and include the reign of King Hammurabi, who created one of the most complete legal codes of ancient culture. Babylon would eventually be destroyed by the Hittites, an Indo-European tribe, and the Kassites, and these groups would hold power until roughly 1200 B.C. During this period the Assyrians began to assert themselves, and by 800 B.C they occupied Babylon and Syria. The Assyrians maintained an iron-hand rule until 600 B.C., a period that saw the reascension of Babylon under the rule of Nebuchadnezzer, a king who destroyed

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[13] Samuel Noah Kramer, The Cradle of Civilization, (New York: Time, 1967), pp. 6,7.

Jerusalem and enslaved the Jewish people in 586 B.C.[74] Babylon would remain a power until its defeat by the Persians in the sixth century B.C.

This began a period of Indo-European rule in Iraq that lasted 1200 years. The Persians gave way to the Macedonians under Alexander the Great in 331 B.C. Macedonian rule was followed by that of the Parthians and the Sassanids, from Turkey and Iran respectively. The Parthians ruled from 126 B.C. to A.D. 227, and the Sassanids controlled the Mesopotamian region from that year until A.D. 637. This period ended with the region devastated by warfare, and the Sassanids eventually fell to the next great power in the region, the Muslims from Arabia.

The Muslims arose in the sixth century A.D. (The subject of the emergence of Islam will be covered in more detail in the demographic section of this chapter.) The forces of Islam swept into Iraq and forced out the Sassanids in 637. Most of the occupants of Iraq at this time were Christians, and these peoples were left to their own devices after the invasion, as long as they remained submissive and paid the tax required of all non-Muslims living within the confines of Muslim rule. This Arab-Muslim rule continued until the twelfth century, when the Mongol expansion finally reached Baghdad. Mongol rule lasted until the fifteenth century, and its most striking

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[74] Henry A. Foster, The Making of Modern Iraq, (New York: Russell and Russell, 1935), p. 6.

legacy was the destruction of the agricultural infrastructure of the river valley. This led to a cessation of the urban-centered way of life in Mesopotamia, and a resumption of a divided, tribal society.

The Ottoman empire was the next foreign ruler of the region, from 1534 to 1918. This period left two indelible marks on Iraqi society, both of which affect strategic culture directly. The first was the continuation of the external rule that the area now known as Iraq has experienced throughout most of its history, and which has encouraged the development of a politically passive society. The second involved the placement of Sunni Muslims, as opposed to the more numerous Shi'a Muslims, in most positions of power. Istanbul saw Iraq as a shield against the more radical Shi'a regimes to the south, and felt that by giving the Sunnis authority, this purpose could be better served.[45] The tradition of Sunni dominance has continued to this day, with the military establishment (with which this thesis is very much concerned, given the usage of Klein's definition of strategic culture) dominated by the Sunni faction. This domination has been maintained despite the fact that Iraq is the only Arab nation with more Shi'as than Sunnis.

Ottoman rule was shattered by the British in 1918, within the context of World War I. The British had an important

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[45] Metz, p. 26.

stake in Iraq for three primary reasons: oil, the pathway to India, and the presence of British bases on Iraqi soil.[16] They understood that they could not rule Iraq from London, so a monarchy was put in place in that country that appeared to be acceptable to the British and the Iraqi people. Amir Faisal, who had led the Arab forces that fought alongside the British in Palestine against the Ottoman Turks, was selected as Iraq's first king. This monarchy remained in power until 1958, when it was overthrown by a coalition of military and political opposition.

Many factors contributed to the end of the monarchy. World War II saw a major expansion of the Iraqi economy, and with it a labor movement that was perceived as, and perhaps was, communist in origin. The regime reacted harshly to this movement, ordering police to fire upon demonstrators and meetings on several occasions. The worst example of this was on 27 January 1948, when 400 demonstrators were killed.[17] Actions such as this began to foment anti-regime feelings throughout the country. Iraq was beginning to become a powder keg ready to explode. As the war in Palestine erupted in 1948, anti-British sentiments began to grow even stronger, and this translated into increased anti-regime feelings. Events

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[16] Mohammad A. Tarbush, The Role of the Military in Politics: A Case Study of Iraq to 1941, (London: KPI, 1942), p. 31.

[17] Marion Farouk-Slugget and Peter Slugget, Iraq Since 1958, (London: KPI, 1987), p. 40.

outside Iraq influenced Iraqi public opinion in the following years, including the nationalization of Iranian oil in 1951 and Nasser's defiance of the British in 1956.[48] Anti-British demonstrations began to sprout up in Baghdad and other Iraqi urban areas, and this resulted in martial law in 1956. The army itself began to reflect anti-British and anti-regime sentiments, and this was the final piece of the puzzle needed for the destruction of the monarchy. The next two years seemed to be quiet, but in 1958 a military coup deposed and murdered King Feisal II and placed Prime Minister Kassem in power.

Kassem's rule, which lasted from 1958 to 1963, saw two important events which would greatly affect the future of Iraq's foreign policy. First, relations with the Soviet Union were expanded, and Russian aid was accepted. This created a Russo-Iraqi "friendship" that would last until the 1980s. Kassem's second contribution to Iraqi history was his 1961 claim to Kuwait, an action which would be repeated by Saddam Hussein some thirty years later. In 1963 Kassem was overthrown and murdered by the army and the Ba'th party, and replaced by an unstable regime that would only last five years. The Ba'th party consolidated its power in 1968 via a

[48] Ibid., p. 43. The nationalization of Iranian oil led to calls for Iraq to do likewise, and Nasser's efforts to repel the French and British in their efforts to "protect" the canal, gave the Iraqis confidence that they too could resist European powers.

bloodless coup which deposed then-President Aref and replaced him with President Al Bakr.

How does this history affect the strategic culture of today's Iraq?

- The country has spent most of its existence under foreign rule of some type, from the conquest by the Persians in the sixth century B.C., to the British, who created an independent monarchy, but stayed deeply involved in Iraqi affairs until the revolution of 1958. The citizens of this country became bystanders in relation to the formation of the national government, and as a result turned towards the family and the tribe. This disaffection has led to a tendency of passivity toward the government, with involvement in public life limited to the family, and has resulted in a strong central government without opposition. This enables the military establishment to act as it desires, with no constraints from the populace. As a result, some actions by the outside world that are intended to promote popular dissatisfaction, such as the current economic embargo, have no effect on the governing regime.

- Biblical accounts of Nebuchanezzer also have an effect upon the Iraqi military establishment, most obviously through its head, Saddam Hussein. The leadership of Iraq sees the reenslavement of the Jews (and the destruction of Israel) as its destiny, and therefore a primary policy goal.[159]

- The above factors have promoted a feeling of hatred towards two of Iraq's closest neighbors: Iran and Israel. The long Persian dominance over what is today Iraq, and Israel's continued existence, are constant thorns in the side of the military establishment in Iraq. Saddam Hussein's father once wrote a pamphlet with a title that was self-explanatory: Three God Should Not Have Made: Persians, Jews and Flies.[160] The hatred directed against the Persians resulted in the 1980-1988 Iraq-Iran war, and Israel has been a target of Iraq since its creation.

- Perhaps the almost constant conquest and control of Iraq by other nations has had another effect upon the strategic

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[159] Timmerman, pp.13-14.

[160] Ibid., p. 109.

culture of Iraq: the leadership seems to have great feelings of insecurity, plus ambitions to demonstrate its capacity to dominate others. This could explain why Iraq has diverted such a large amount of its national resources towards a military build-up, encompassing both conventional arms and weapons of mass destruction. The leadership in Iraq could be attempting to gain respect from the rest of the world through its military might. Iraq is a nation that has had almost its entire history (in a long term perspective) dictated by foreign powers, and its leadership may feel that it is time to enter the world stage as an independent, powerful force.

B. DEMOGRAPHICS

Iraq is a country of several ethnic groups, from the Kurds in the north to the Shi'as in the south, and the impact that this has upon Iraq's strategic culture is significant. The military establishment is controlled by the minority Sunni Muslim faction, as it has been since the time of the Ottoman empire, and this faction has led with an iron fist. The Kurds and the Shi'as have both shed a lot of blood as a result of the Sunni attempts to hold and consolidate power. The breakdown of religious and ethnic groups within Iraq is as follows:[101]

Shi'a Arabs (concentrated south of Baghdad).....55%

Sunni Arabs (Baghdad, central/central northern Iraq).....20%

Kurds (mountainous northern Iraq).....17-20%

Christians and Jews (throughout).....5%

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[101] The information contained within the table was collected from Amatzia Baram, pp. 3-5.

Others.....under 2.5%

Sunni Arabs hold most positions of power in Iraq, despite the fact that they only comprise 20% of the population, as the table above indicates. The Ottomans contributed to this fact by placing Sunnis in these positions during their rule, due to their fear of the spread of Shia Muslims into Asia Minor and their perceived need for a Sunni buffer state.[10] The Sunni became Ottoman surrogates, with better education and career prospects than the other ethnic groups within Iraq. This trend continued under the British, and the British-imposed monarchy of 1921 was Sunni-led. There are two important facts about the Sunni power base that must be discussed. First, it excludes the Kurds, despite the fact that the majority of Kurds are Sunni. Secondly, the power is concentrated in the hands of a small portion of Sunnis, such as a family or tribe. In the present context the town of Tikrit, a small town north of Baghdad, is the birthplace of most individuals in power positions within Iraq.

The Shi'as are the most populous ethnic group within Iraq, and Iraq is the only country in the Arab world with this demographic characteristic. The Shi'as have nonetheless been underrepresented in the Iraqi power sphere for centuries. Two factors have contributed to this, and both have already been mentioned in this chapter: the foreign empowerment of Sunnis

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[10] Metz, p. 26

and the political passivity of the Shi'as and most other Iraqis. The iron-handed rule of Saddam Hussein can also be introduced into this equation as a factor, and his strikes against the Shi'a in the south during and after the Iraq-Iran war could be considered as a reason why the Shi'a have not risen to positions of power. Given the Shi'as' position of weakness and political passivity prior to Hussein's actions, however, it is doubtful that this action has been a major factor in Shi'a underrepresentation.

Another factor that must be considered is the presence of a Shi'a power base in neighboring Iran. Although at first glance it would seem that this would increase the danger to the Sunni controlled military establishment from within Iraq, the Shi'a controlled Iranian government is considered extremist by the Shi'a factions within Iraq. This, along with the historical Persian-Arab hatred that exists between the people of these two countries, reduces, or possibly eliminates, the possibility of an Iranian-led Shi'a coup in Iraq. This leads to the conclusion that although the Shi'as are the only sectarian group that outnumber the Sunnis in Iraq, they are not considered the primary threat to the Sunni power base.

The most prominent internal threat to Sunni domination over the Republic of Iraq is the Kurds in the north. The Kurdish challenge arises from the desire of the Kurds to establish an autonomous state of Kurdistan consisting of the

Kurdish-populated areas of Iraq, Iran and Turkey. In recent years this issue has gained international prominence as a result of Kurdish cooperation with Iran during the last five years of the Iran-Iraq war, and the consequent chemical warfare tactics that Saddam Hussein used against Iraqi Kurds.[13] The Kurds in Iraq assisted the Iranians because they felt that an Iranian victory would give them an excellent chance to create a unified Kurdistan state.[14] Operation "Provide Comfort" in northern Iraq is designed to protect Kurdish refugees from the military might of Saddam Hussein. Although the Kurds were granted the right to rule their region autonomously in the 1970 Iraqi constitution, the Ba'th party never honored this agreement. The Kurds will continue to be a thorn in the side of the Iraqi leadership well into the future, but international pressure to avoid the establishment of a unified Kurdistan, because of the obvious objections of Turkey, will probably prevent the Kurds from reaching their goal.

This ethnic diversity has contributed to the Iraqi strategic culture in three major ways:

- The hostile ethnic groups give the Sunnis and the Ba'th party abundant "cannon fodder" for attempted conquests. By stocking the lesser military units with these ethnic

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[13] Ibid., p. 202.

[14] The Kurds in Iran, however, supported the Iraqis during this war because they felt that Iraqi victory was the key to Kurdish reunification. Therefore the chances for a unified Kurdistan were greatly diminished.

groups, Hussein has a substantial supply of expendable manpower, while stocking the elite fighting units, such as the Republican Guard, with Sunnis. This maintains the supremacy of the Sunnis within the military, while not restricting the human resources available to it.[105]

- The presence of a hostile Kurdish faction in the north, coupled with the reality of active Kurds in Turkey and Iran, presents the Iraqi leadership with a permanent security threat to its northern territory. Baghdad has chosen to deal with this problem through suppression, and this has led to international involvement in that area. The Iraqis know that the problem will remain, and this leaves this area in crisis, particularly during wars. Twice in the last decade Iraq has been at war, and both times the Kurds attempted to take advantage of an external threat to gain their independence. Therefore, the Sunnis must always ensure that this area is secure both prior to, and during, hostilities with a foreign power. This can be exemplified by the toleration of greater Kurdish autonomy during the Iran-Iraq war, because a harsh stand would have led to a conflict in the north at a time when the Iraqis were tied down in a major war with Iran.[106] The government in Baghdad must always consider its actions towards Kurdistan during wartime, or a strategically costly second front could result.

- In developing strategies for war, the Iraqi military establishment must deal with the internal factor to a greater extent than the United States and European nations. Due to the intermingling of many hostile ethnic and religious groups, the threat of domestic upheaval is present at all times in Iraq.

C. REGIONAL CONSIDERATIONS

The Middle East is one of the most unstable and volatile regions in the world, in part due to the actions of Iraq. The primary players in this region include Iran, Iraq, Israel,

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[105] Metz, p. 96. Although the vast majority of the Iraqi officer corps is Sunni, three-quarters of the lower ranks are Shia.

[106] Ibid., p. 248.

Saudi Arabia, and Syria. Iraq has conducted military strikes against three of these nations, as well as Kuwait, in the last ten years, Iran, Israel, and Saudi Arabia. Syria, the remaining important Arab player, is the birthplace of the Ba'th Party, which currently rules Iraq.

Iran was at war with Iraq for eight years, from 1980-88, and this war left Iraq as the primary Arab conventional military power in the Middle East. This war was the result of many factors, including religious differences (Sunnis-Shi'as), Persian-Arab animosities, and the political question of borders. These problems existed before the war, and they still exist today. The carnage created by the war should deter the two countries from going to war again in the near future, however. Hussein expected a quick and decisive war when he began hostilities with Iran in 1980, and hoped to replace Iran as the major power in the Persian Gulf.

> Above all, Iraq launched the war in an effort to consolidate its rising power in the Arab world and to replace Iran as the dominant Persian Gulf state. Phebe Marr, a noted analyst of Iraqi affairs, stated that "the war was more immediately the result of poor political judgement and miscalculation on the part of Saddam Hussein," and "the decision to invade, taken at a moment of Iranian weakness, was Saddam's."[107]

Iran's ability to drag the Iran-Iraq war out to an eight-year conflict is a direct reflection of the fanatic, fundamentalist government that led the country, embodied by the Ayatollah Khomeini. Despite the fact that Iranian war

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[107] Ibid., p 232.

equipment was in disrepair due to a lack of American maintenance and the decimation of the highly trained officer corps through execution, the Iranians drove back early Iraqi gains and forced the war into a stalemate from 1982-87. The war of attrition was a direct consequence of the Iranian willingness to use a human wave tactic to lead offensives. This tactic involved sending unarmed children and senior citizens through minefields and towards machine guns in groups of thousands, and resulted in immense casualties, averaging twice that of the Iraqi casualties.[108] Iran had the population to sustain such a pace, however, and this tactic forced the Iraqis to resort to chemical warfare in order to hold off the Iranians. The Iraqis pursued a peace settlement from 1982 on, but were not able to gain such a settlement until 1988. Although the current leadership in Tehran is considered more moderate than its predecessor, the Iraqis must still deal with an historically hostile state willing to take immense casualties on its eastern border.

Another important regional power in the Middle East is Israel. There are three primary reasons for Israel's importance in Iraqi eyes. First of all, there is the legacy of Nebuchanezzer, the Babylonian king that enslaved the Jews in biblical accounts. This is addressed in the later section on Saddam Hussein. Secondly, Israel seems to be the foe

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[108] Ibid, p. 235.

around whom the Iraqis feel all Arab nations can be united. This was evident in Iraqi statements after Israel's raid on Osirak in 1981:

> The Israeli attack on Thuwaitha proved once again that "the Zionist entity is thus the sworn enemy of the Arab Nation and of Iraq." Faced with Israeli aggression, "every nation that is truly seeking peace and security and that honestly respects freedom and the independence of peoples should help the Arabs in one way or another to acquire the atomic bomb, so that they can confront the real atomic bombs the Zionist entity possesses."[104]

This statement reflects the view that the raid on Osirak was not an attack against Iraq, but rather an attack against the entire Arab nation.

The third factor stems directly from the above quotation, the widespread judgement that the Israelis possess nuclear weapons. This reported nuclear weapons capability makes Israel important in all Iraqi military decisions involving that part of the world.

Iran and Israel are the only neighboring countries which could pose a serious military threat to Iraq, but other nations in the region are important to the Iraqi military establishment. Saudi Arabia's close ties to the United States give U.S. forces a staging platform from which to act against Iraq in times of conflict, as demonstrated in Desert Storm. This friendship also prevents Iraq from acting directly against Saudi Arabia because of fear of risking retaliation

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[104] Stated on 31 June 1981 by Saddam Hussein, cited in Timmerman,p. 103-104.

from the United States. Kuwait is also a factor in Iraqi decisions, given its rich oil reserves and perceived vulnerability. The Iraqis first attempted to declare Kuwait a province of Iraq in 1961, and their 1990 action to enforce this statement led to the Gulf War.

These regional considerations affect Iraqi strategic culture in different ways:

- The threat of a large hostile power, willing to take tremendous casualties to achieve victory, in the form of Iran to the east of Iraq, forces the Iraqis to seek means other than direct battlefield confrontation with which to wage war. If the fight could be fought without having to face these human waves (in other words, if the fight could be taken directly to Tehran), then the disadvantage that Iran's population superiority presents to the Iraqi leadership could be circumvented. This is a reason for Iraq's pursuit of ballistic missiles, modern military strike aircraft, and NBC weapons.

- The reported presence of nuclear weapons in the state of Israel affects Iraqi strategic culture in three major ways. First of all, it prevents Iraq from acting decisively against Israel. For example, the Iraqis may have been deterred from striking Israel with chemical weapons during the Gulf War because of a fear of nuclear retaliation. Secondly, the reported Israeli nuclear arsenal gives Iraq's leadership an "excuse" to pursue nuclear weapons for their own country.

- The mere existence of Israel has effects upon the Iraqi leadership above and beyond the significance of the reported Israeli nuclear arsenal. The Nebuchanezzer legacy still lives in modern Iraq, creating a situation where a major foreign policy goal of Iraq is the destruction of the state of Israel.[110] The presence of Israel is also a major rallying point for Baghdad's call for pan-Arabism, with Iraq as the lead country, of course.

- The combination of Iran to the east and Israel to the west has also led the military establishment in Iraq to fear conspiracy between those two nations against it. This

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[110] Ibid., pp. 13-14.

fear is historically supported by alleged Jewish support of Cyrus the Great (a Persian who liberated the Israelites) in his quest to conquer Babylon in 539 BC.[111] Israel did indeed sell arms to the Iranians during the Iran-Iraq war, and this action served to foster Iraq's fears that the two were joining forces to destroy it.[112]

- Saudi and Kuwaiti relations with the United States also give the Iraqi military establishment cause for concern. As was evident during the Gulf War, the Iraqis cannot take action against other countries in their region without considering possible intervention by external powers, such as the United States. This, of course, adds another factor to the regional military equation. The Iraqis must not only deal with the military powers in their region, but also contend with the power of nations far removed from that region. This complicates the overall threat equation in the region, and should deter, to some extent, Iraqi offensive actions against other Arab countries.

D. THE BA'TH PARTY

The Ba'th party was born in 1944 in Syria, under the leadership of Sunnis and Christians. Its birth and growth were the result of two primary factors: a disillusionment with current "older" Arab leadership, and a desire to throw off the European "imperialist" yoke.[113] The older Arab leadership was seen as responsible for Arab defeats in Palestine, and the French were the European "imperialists" in question occupying Syria. The Ba'th party first appeared in Iraq in 1949, and obtained leadership through a coup in 1968. The primary tenet of the party is Pan-Arabism:

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[111] Baram, p. 110.

[112] Timmerman, p. 141.

[113] Slugget, p. 87-88.

> The party's most important principle was that of Arab unity (al-wahda al-'arabiyya), which envisioned the political unification of all the Arab lands - from the Atlantic Ocean to the Persian Gulf, (or, in Ba'th vernacular: The Gulf of Basra) and from the Taurus mountains in the north to the Indian Ocean to the south - whereby the Arabs would rise from the ashes and fulfil a worldwide 'eternal mission' (risala khalida) of civilization and enlightenment... Arab nationalism was perceived... in terms of language, culture and history.[114]

In historical context, the Ba'th party is very similar to both the German Nazi party and the Communist Party of the former Soviet Union. Its similarities to Nazism include hero worship, racism, and faith in war as "purification".[115] It is believed that a single man will arise and bring the entire Arab world together under the flag of Islam (hero worship). This single nation will then drive out all non-Muslims, exterminating those that remain (racism), and then strike out at the world as a new superpower, ethnically and religiously cleansing it (purifying war).

The Ba'th party similarities to the Communist Party include an inclination towards socialism (a theme shared with Nazism) and single-party organization. An article from the Party's constitution can demonstrate the socialist aspect:

> The Party of the Arab Ba'th is a socialist party. It believes that socialism is a necessity which emanates from the depth of Arab nationalism itself. Socialism constitutes in fact the ideal social order which will allow the Arab people to realize its possibilities and to allow its genius to flourish, and which will ensure for

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[114] Baram, p. 9.

[115] Timmerman,, p. 3.

> the nation constant progress in its material and moral output. It makes possible a trustful brotherhood amongst its members."[116]

The organization of the party and its relationship to government is similar to the Soviet model in that one party rule, with the government subservient to the Ba'th, is the party's doctrine.[117] Tikrit stranglehold on the Ba'th sets it apart from the Soviet example, however.

The Ba'th party is almost completely dominated by the village of Tikrit, a small village north of Baghdad on the Tigris river. When the Ba'th gained power in 1968, most of the top political and military figures were from Tikrit, and many of these were related to each other in some way.[118] This is a result of two factors, the first being the feelings of political passivity and disaffection from the state mentioned in the historical section of this chapter. The second factor is a direct reflection of the first: the lack of a binding ideology.[119] Since the concept of Socialism cannot be persuasive in a society of people that do not view the state as a vital part of their lives, this ideology could not bind the country, or a group within the country, together

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[116] "The Party of the Arab Ba'th: Constitution," in Sylvia Haim, ed., Arab Nationalism; an Anthology, (London: Berkeley, 1962), pp. 23-41.

[117] Baram, p. 10.

[118] Christine Moss Helms, Iraq: Eastern Flank of the Arab World, (Washington: Brookings, 1984), p. 127.

[119] Metz, p. 53.

to the degree needed for a strong party presence. Therefore, the only bond available was that of village and family cliques, and that village happened to be Tikrit.

The contributions to Iraqi strategic culture are rather straightforward:

- The racist portion of the Ba'th platform (that is, a driving out of non-Muslims and the extermination of those that might remain) precludes the existence of the state of Israel. This helps to explain the military establishment's preoccupation with that state, and its efforts to acquire nuclear weapons in order to assist in the elimination of Israel.

- The idea of hero worship in Ba'thist doctrine explains the preeminence of Saddam Hussein in Iraq. Hussein wants to project himself as the figure who will unite the Arab world, drive the Jewish people out of the Middle East, and lead a new Arab nation on the road to conquest. This was a rationale behind the invasion of Kuwait.

- The concept of purifying war is also a driving force behind the pursuit of a nuclear weapon by the military establishment in Iraq. If the united Arab nation is to conquer the world, it must be able to match the weapons of mass destruction possessed by the nuclear powers.

- The domination of the party by a single village (Tikrit), and concentration of the military establishment therein, places the party in a constant internal power struggle between the clique in power and those that wish to obtain power. This also creates a situation where those that may be considered criminals in another society, due to their violent nature, can obtain power in the entire country simply by fighting their way into a position of power in their village. When the politics of a village are thrust into the national scene, the results can be, as they are in Iraq under Saddam Hussein, "thug rule."[120]

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[120] "Thug rule" implies a situation like that of Germany after the Nazi acquisition of power, when it was said in some circles that the street gangs were in control of the government. This is one more factor that makes Ba'th rule in Iraq comparable to Nazi rule in Germany in 1933-45.

- The primary tenet of the Ba'thist doctrine, Pan-Arabism, has a major impact upon the strategic decisions of the military establishment in Iraq. The pressure is upon Baghdad to set an example of leadership within the Arab community. This contributes to two self-imposed hurdles that the Iraqis must always clear in their foreign policy moves: actions must be strong and aggressive, and Baghdad must lead the Arab world in the acquisition of nuclear weapons. The first factor can be demonstrated by Iraq's invasion of Kuwait and its reluctance to back down under threats from the U.N. coalition, and the second can be exemplified by Baghdad's reluctance to cooperate fully regarding its nuclear weapons program in dealings with U.N. inspection teams.

E. SADDAM HUSSEIN

The military establishment in Iraq is totally controlled by one man, and the study of that man's thinking is necessary if the strategic culture of this country is to be understood. Saddam was born in the birthplace of most of the Ba'th party "elite", Tikrit, in 1937. He was raised by his uncle, Khairallah al-Tulfah, who bore a strong hatred for the British and an intense respect for the Germans and their leader during World War Two, Adolf Hitler.[1:1] Both of these feelings were transferred to Hussein, and would eventually have a strong bearing upon his future, leading him to join the Ba'th party in 1956. Hussein, along with Ahmad Hasan al-Bakr, gained control of the Revolutionary Command Council in 1968.[1:2] At this point al-Bakr controlled the reins of power in Iraq, but Hussein's position within the RCC was similar to that of

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[1:1] Timmerman, p. 1.

[1:2] Farouk, p. 129.

Stalin prior to his acquisition of power. All positions of power were subject to Hussein's approval; if he wanted someone removed from the party, it was done. Al-Bakr remained in power until his resignation in July 1979, and at this point Saddam Hussein became president. By this time most positions of power were held by members of the Talfah family of Tikrit.[143] Hussein's brother-in-law, General Adnan Khayr Allah Talfah, had become minister of defense; the cabinet was stocked with family members, through both blood and marital ties. The first test of this family-led government would be the Iran-Iraq War.

This war was partly the result of a personality clash between the Ayatollah Khomeini and Saddam Hussein, and was the first example of what Hussein's leadership would bring to the region: increased instability. Within a year-and-a-half of gaining power, Hussein had already gone on the offensive against another nation, demonstrating the overconfidence and poor judgement that would mark his rule.[144] Hussein expected a quick victory over the Iranians, given the instability in that nation, but he was in for a protracted eight-year conflict that would demonstrate the lengths to which the Iraqi leader was willing to go to obtain his goals. First of all, Hussein was willing to use chemical weapons not only against

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[143] Metz, p. 59.

[144] The first Iraqi air offensives began on 22 September 1980, fourteen months after Hussein gained power.

foreign troops, but also against Iraqi citizens, as demonstrated at Halabja:

> In a particularly infamous March 1988 episode in the town of Halabja, Iraqi forces killed hundreds, and possibly thousands, of Iraqi Kurdish civilians with chemical weapons, apparently in retaliation for their having sided with Iran when the latter gained control of the area during an earlier phase of the conflict. In September 1988, when Iraqi Kurds openly revolted against the Hussein regime in a bid for independence, Iraqi forces again used chemical weapons extensively in the ensuing campaign against the rebels, causing widespread civilian casualties according to many reports."[125]

Secondly, Hussein was willing to forego feeding his population and repaying his debts not only in order to win a conflict, but also to continue building his military might after the conclusion of the war. By the end of 1988, Iraq was having difficulty repaying foreign debts due to its increasing arms purchases. This situation caused foreign banks to cease loans to Baghdad for fear of default, and also left the Iraqi government in the position of having to choose between using its hard currency for arms purchases or on farm commodities. The United States eventually rescued the Iraqis from this situation by extending $1 billion in farm credits to the Iraqi leader.[126] Hussein, however, was obviously pursuing the same goal he was pursuing when he attacked Iran: turning Iraq into the most powerful nation in the Persian Gulf. To Saddam, this

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[125] Leonard Spector, Nuclear Ambitions, p. 189.

[126] Douglas Frantz and Murray Waas, "Secret U.S. aid to Iraq in '89 cited," Los Angeles Times, 23 February 1992, p. 12A.

was important, because if he was to be the "hero" that united the Arab world under the flag of Islam, he had to be in control of the most powerful state in the Arab world.

Although the war with Iran lasted eight years, this is not the only example of aggressiveness demonstrated by Saddam. First of all, Hussein has always been preoccupied with the destruction of Israel. This can be ascribed to his desire to fulfill his self-proclaimed role as the 20th century Nebuchanezzer. Hussein announced that he was a descendant of this "Iraqi" figure, and said that he too would bring the Jewish people into Babylon in captivity, and this time there would be no Cyrus to free them.

> Saddam Hussein was driven by no ordinary vision. Again and again he would refer back to Nebuchdnezzar, the biblical king of Babylon. His favorite episode in the saga was when Nebuchadnezzer brought the Jews into captivity in Babylon, he hoped to repeat that feat.[17]

Another example of this leader's overconfidence and aggressive nature is his attack upon Kuwait in August 1990. Under the veil of claiming Kuwait as the 19th province of Iraq, Hussein made a bid for the land which would have shifted the balance of power in the region in Iraq's direction, given the large percentage of oil Baghdad would control. The only factor that stopped this, and possible future, Iraqi aggression was the intervention of the United Nations, led by the United States of America.

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[17] Timmerman, p. 13-14.

Another factor of Hussein's persona that must be examined is his desire to create a cult of personality around himself:

> Saddam was intent on becoming the new Saladin, the Muslim warrior who drove the Christian Crusaders out of the Holy Land in the twelfth century... Saddam Hussein had built himself up into a larger-than-life figure, whose portrait dominated every public square, every street corner, every living room in Iraq. There was Saddam Hussein the devout Muslim, kneeling to pray at the mosque; he was the Arab warrior, making his triumphal entry into Jerusalem astride his white horse, as Nebuchadnezzar had done before him; he was the leader of the historic Qaddisiya battle to drive out the Persian infidel, looming large over yet another battlefield. The Iraqi leader was everywhere, in every guise.[148]

In order to facilitate his deification, Hussein murdered those around him that challenged his power, including members of his family if need be.[149] Saddam's struggle to create a cult around himself was used to consolidate and solidify his power, through the forces of fear and respect. It has also been used to cast him as the man that will bring the Arab world together, and lead it to its "proper place in the world," i.e. superpower status.

How do these factors concerning Saddam Hussein affect Iraq's strategic culture?

- Hussein's overconfidence and aggressive nature have been transferred to the military establishment. Iraq's actions in Iran, Kuwait and towards Israel are direct reflections of Saddam's psyche, in combination with Iraqi historical factors. This direct relationship between Saddam's psyche and Iraqi policy can be attributed to the effectiveness of

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[148] Ibid., p. 115.

[149] This included the death of Hussein's brother-in-law in a mysterious helicopter accident that is attributed to Saddam's treachery. See Timmerman, p. 345 for details.

Saddam's cult of personality campaign, as well as the political passivity of the Iraqi people.

- Hussein's desire to become the "hero" figure that unites the Arab world has led Baghdad to seek to acquire nuclear, chemical, and biological weapons. As previously discussed, if Hussein is to unite the Arab world and then create a superpower out of this Pan-Arab nation, weapons of mass destruction are necessary. An additional factor is Hussein's willingness to use these weapons, as demonstrated against the Iranians and the Kurds. This willingness, however, has not been demonstrated when the target has appeared capable of responding in kind, as the example of Israel during the Gulf War may indicate. Although Hussein was willing to launch conventional missiles against Israel, he did not proceed with chemical weapon strikes against that nation. Two factors could contribute to this unwillingness, one of which is a possible lack of Iraqi ability to place chemical warheads on missiles. The second possibility, fear of an Israeli retaliation, demonstrates how Hussein may have been deterred.

- A characteristic shared by many Arab leaders, an unwillingness to show weakness at any time, can be demonstrated by Hussein's actions in the Gulf War. Although he was obviously overmatched, Saddam held his ground and fought. Given the dynamics of Iraqi politics, he realized that backing down from the U.N. coalition would lead to his overthrow and, most probably, his death.

- Hussein's respect for Hitler, passed down from his uncle when he was a child, does have some effect upon the military establishment in Iraq. Hussein's use of the goal of uniting the Arab world as a rationale for expanding his own power could be compared to Hitler's efforts to unite the Germans throughout Europe during World War Two. Saddam's attempted fait accompli in Kuwait may also have its roots in Hitler's policy in 1937-39; the rapid reaction by the U.N., however, led to a very different result in Hussein's case.

- The fear created by Saddam's status as the focus of a cult of personality is also a factor in the strategic culture of Iraq. Disagreement with Hussein could lead to death for some of his advisors. Therefore, they may not be completely honest with him when they see a problem with one of his strategic plans. Being surrounded by "yes" men can result in the security of a nation becoming totally dependent upon the judgement and knowledge of one man.

F. CONCLUSION

The strategic culture of Iraq has been defined through five factors: history, demographics, regional considerations, the implications of Ba'th Party rule, and the impact of Saddam Hussein's leadership. History has left the country with a passive population and a great sense of insecurity due to the considerable time Iraq has spent under foreign rule, and with a hatred of the Iranians and the Israelis. The demographic situation implies a country constantly facing the threat of domestic upheavals, owing in part to the independence aspirations of the Kurds, but endowed with a large supply of "expendable" manpower, at least from the viewpoint of Saddam Hussein. The regional situation presents a powerful country to the east in Iran, and a reported nuclear power to the west in Israel. Iraq is also concerned about collaboration between the two, and must factor in the impact of external powers such as the United States. The Ba'th party brings racism, a desire for a united Arab world, and the necessity for hero worship to the equation. Party rule also leaves a single ethnic group from one village in control of the country, and the need for "purifying" war in its doctrine implies a need for nuclear weapons. The rule of Saddam Hussein gives Iraq an overconfident, aggressive nature in its foreign policy endeavors, as well as a focus for the hero worship tenet of the Ba'th Party. It also leaves the country with a man in power with a deep respect for Hitler, supported by a cult of

personality, and with an inability to back down in an international crisis.

What does this strategic culture mean with regard to the future of Iraq's nuclear weapons program? Saddam's efforts to preserve his nuclear weapons program have been apparent since the end of the Gulf War, as he has used stalling techniques and threats to hinder the inspection teams concentrating upon these weapons. There are two primary reasons why Hussein is stalling the U.N. teams. First, Saddam, as discussed in the preceding section, is a man whose position of power is dependent upon not showing weakness in any way, and he is placed in a position of weakness by having to allow the inspection teams inside his borders. The only way to offset this is by making it as difficult as possible for these teams, in an effort to prove he is still in control. Secondly, the nuclear weapons program of Iraq is necessary if Hussein is take his "proper place in history" as the leader of a united Arab nation, and if that Arab nation is to go forward in its "purifying" war.

These two factors, along with the reported presence of nuclear weapons in Israel, indicate that Iraq will continue to pursue nuclear weapons. U.S. intelligence estimates state that the Iraqis will technically be able to build nuclear weapons within a "few years" after the departure of the U.N.

inspection teams.[130] The strategic situation, with reportedly nuclear-armed Israel to the west and powerful Iran to the east, gives the Iraqi nuclear program internal staying power above and beyond the desires of Hussein.

Therefore, given the factors discussed in this chapter on strategic culture, the cessation of the nuclear weapons program in Iraq is extremely improbable. Unfortunately, it seems that even removing the Ba'th Party and its leader, Saddam Hussein, from power would still leave Iraq with many factors that would encourage nuclear weapons research to continue.

[130] Elaine Sciolino, "Iraqis Could Pose a Threat Soon, C.I.A. Chief Says," p. A9.

V. POLICY PRESCRIPTIONS FOR THE FUTURE

The ongoing investigation of the nuclear capability of Iraq by the U.N. Special Commission has demonstrated a very serious shortcoming in the ability of the International Atomic Energy Agency to achieve one of its primary goals: limiting the proliferation of nuclear weapons technology and capability. The I.A.E.A., established in 1957, uses inspections, audits, and inventory searches to prevent the diversion of peaceful nuclear materials to weapons programs.[121] The extensive degree to which the Iraqis circumvented these safeguards, as the U.N. investigation has revealed, indicates that the current non-proliferation regime has serious shortcomings. There is now a need for new barriers in order to protect the rest of the planet from the unknown number of dictators, such as Saddam Hussein, who are currently seeking nuclear weapons.

The United States and Western Europe must be at the forefront of the effort to eliminate, or at the very least minimize, this threat for a variety of reasons. The first of these is that the nations of NATO may become more and more likely to be within range of a hostile dictator armed with nuclear missiles. Self-preservation dictates that these

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[121] Leonard S. Spector, Going Nuclear, p. 339.

nations must either develop a system to eliminate the possibility of a hostile power deploying nuclear weapons, or be prepared to defend themselves against such a threat. The proliferation problem affects the security of these nations in a very direct way, especially those nations on NATO's southern flank. A second reason for these nations to involve themselves is the political, economic, and military power that NATO nations possess. A third reason for West European and U.S. leadership in this struggle involves the contribution by these nations to the very proliferation they are now threatened by. In the case of Iraq, most of the technology, training, and material the Iraqis received came from the Europeans and the Americans.

This chapter will discuss the tools that must be used by Europe, the United States, and other concerned nations in order to contain the threat of nuclear proliferation. First, intelligence and reconnaissance must be improved. This involves both increasing the effectiveness of the present system and diverting more assets to the areas affected. The second tool to be considered is the existing non-proliferation regime. This regime is currently made up of a series of international agreements, the most important being the Non-Proliferation Treaty and the International Atomic Energy Agency. Export controls and economic sanctions are the third tool. These can be used to prevent a repetition of what occurred in Iraq, where the nations that now seek to disarm

Iraq have come to realize that their companies are the ones that armed Iraq.[132]

These tools must be used to accomplish four objectives necessary for the overall goal of eliminating the threat that proliferation represents. The first objective is to discourage nations from desiring to possess nuclear arsenals. If no non-nuclear state wants to own nuclear weapons, the threat will be virtually eliminated. The second objective is to prevent nations that desire nuclear weapons from obtaining them. In this case, if such nations cannot obtain nuclear weapons material, the threat can be diminished.

The third and fourth objectives are essentially necessary if the first two are not met. Objective three is to deter, or contain, the use of nuclear weapons by nations that obtain them. A fourth conceivable objective, one that may be deemed appropriate in some cases, is to destroy the nuclear capacity of a nation that obtains nuclear weapons. If the nuclear forces of a hostile power are destroyed before they are brought to bear against another nation, the threat is eliminated.

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[132] See Timmerman for an extensive discussion of how Western firms and governments assisted in Iraq's nuclear weapons program.

A. INTELLIGENCE AND RECONNAISSANCE

Improved unilateral and joint intelligence is vital to the goal of halting or slowing the spread of nuclear weapons in the future.

> Perhaps the most important unilateral measure is the gathering and analysis of intelligence. A much larger investment in targeting nonproliferation is needed to provide early warning and avoid the intelligence failures evident in the Iraq case...There is an important synergistic interaction between national intelligence efforts and the international inspection system. National intelligence can both verify the effectiveness of international inspection and alert international inspectors to problem areas. The effectiveness of the U.N. special commission in Iraq depended heavily upon such efforts.[133]

Even if joint efforts fail, national intelligence agencies must step up their nuclear proliferation detection measures, but simple manpower and budget increases are not sufficient to the task. The focus of these assets must also be shifted, away from a total concentration upon seeking signs of modern technology such as the gas centrifuge, towards a recognition of the relevance of older technologies such as the calutron.

Prior to August 2, 1990, the day that Iraq invaded Kuwait, the extent of the Iraqi nuclear weapons program was unknown.[134] Saddam Hussein, however, had made it clear as early as September 1975 that he wanted to obtain a nuclear

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[133] Nye, p. 1298.

[134] Zachary S. Davis and Warren H. Donnelly, "Iraq and Nuclear Weapons," p. 1.

weapon. His stance was made clear in a statement he made after the Iraqi government made a deal with France to purchase the Osirak nuclear reactor.[135]

> "The agreement with France," Saddam declared, "is the first concrete step toward the production of the Arab atomic weapon."[136]

This should have made it obvious to U.S. and allied intelligence that the Iraqis wanted nuclear weapons. The question is, armed with such knowledge and given the extensive industrial and military infrastructure that Iraq possessed, why did the intelligence community not realize the extent of Iraq's nuclear weapons program? The Iraqis' desire to possess nuclear weapons, along with their advanced technological infrastructure, should have been clear clues to the C.I.A. and other intelligence organizations that there was a threat of the Iraqis making a breakthrough in the area of nuclear weapons that could have accelerated their nuclear timetable.

Given this knowledge, how far along did the intelligence community conclude Iraq had travelled on the road to nuclear weapons? According to one source, it was discovered that the Iraqis were six months from possessing the technology necessary to produce nuclear weapons as early as November of 1990. The Defense Intelligence Agency reportedly informed the

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[135] The Osirak reactor was destroyed by an Israeli preemptive strike in 1981. The Israelis cited fears that the reactor would be used to fabricate nuclear weapons.

[136] Timmerman, p. 30.

President of this fact in November of 1990.[137] Following the Gulf War, it was verified that Iraq was six months to three years away from creating its first nuclear weapon, depending on the source.[138] Despite the alleged November 1990 DIA report, most intelligence organizations in the United States and abroad appeared surprised at how far along the Iraqi nuclear weapons program had come. This raises a question about whether these same intelligence organizations may be mistaken about other nations that may be seeking nuclear weapons, such as North Korea and Iran. If intelligence is having difficulty keeping track of nuclear weapons progress in non-nuclear weapons states, how can it be adjusted to deal with this shortcoming?

First of all, even though the assets may be present to deal with the problem, nuclear proliferation does not seem to be a priority.

> ...[T]he C.I.A. had only one technical analyst responsible for examining Iraq's nuclear program before the August 1990 invasion of Kuwait, and he had to monitor Japan as well. The Defense Intelligence Agency had only two analysts assigned to Iraq, but 42 to issues relating to Americans missing in action in Southeast Asia... satellites that had been devoted to the Iran-Iraq border in the mid-1980's to help Iraq in its war against Iran were shifted back to the Soviet Union once the war was over.[139]

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[137] Ibid., p. ix. This source, however, was not supported by documentary evidence in Timmerman's book.

[138] Nye, p. 1293.

[139] Elaine Sciolino, "Iraq's Nuclear Program Shows the Holes in U.S. Intelligence," p. E5.

This demonstrates that nuclear proliferation in Iraq had a low priority in the areas of both intelligence and reconnaissance, despite the fact that Iraq had made its intentions regarding nuclear weapons clear and possessed the infrastructure necessary to reach its goal. If more assets could be shifted to nations such as North Korea, Iran, Taiwan, and Libya (nations with the potential to repeat the example given by Iraq), the odds of a repetition of a situation like that in Iraq regarding nuclear weapons could be diminished. This seems to be a very attainable goal with the decline of the Soviet Union, and the subsequent release of resources that have heretofore been concentrated totally upon that country, but this diversion in itself will not be enough to eliminate the intelligence shortcomings.[140]

A second step that could be taken in regard to intelligence and reconnaissance involves jointness. If Europe, the United States, and other concerned nations could create a joint intelligence agency dedicated to the study of nations seeking a nuclear weapons capability, such an organization could perhaps be effective in detecting nuclear-weapons development by non-nuclear nations. This organization would have to be capable of going above and beyond the current

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[140] Joseph F. Pilat, "Iraq and the Future of Nuclear Nonproliferation: The Roles of Inspections and Treaties," Science, 3 April 1992, p. 1227.

ability of the I.A.E.A., which is restricted by the provisions included in the Non-Proliferation Treaty.

The primary limitation of the NPT regime is that it is a political barrier, subject to political restrictions. In order to get non-nuclear nations to sign, the treaty included many concessions. These concessions include limitations upon what facilities may be inspected.

> ...[T]he IAEA safeguards system has some well-recognized limitations. First, and most important, key installations in countries of proliferation concern including enrichment and reprocessing facilities, are not under the IAEA system...[141]

David Kay, the leader of many of the inspection teams into Iraq and the Secretary General of the Uranium Institute, demonstrated concern about the safeguards system. He has said that there are inherent weaknesses in the NPT regime that prevented it from discovering the extent of Iraq's nuclear weapons program, and may prevent it from uncovering clandestine nuclear activities in other nations.[142]

Thus, the I.A.E.A. is unable to inspect either installations in nations that have not signed the NPT or the undeclared installations of nations that are NPT signatories. This weakness was exploited by the Iraqis in their bid for nuclear weapons, and must be eliminated. A joint intelligence

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[141] Spector, Going Nuclear, p. 337.

[142] Kay, p. 2. Kay goes on to state that this inherent weakness is due to the bargain struck when the NPT was signed to allow only declared facilities to be subject to safeguards in exchange for peaceful nuclear technological transfer.

agency might be able to overcome these barriers, and work outside the limitations of the N.P.T. regime.

If a joint intelligence organization proves to be politically or operationally impractical, the individual nations should set up "blue ribbon" panels dedicated to intelligence requirements involving nuclear proliferation.[143] This could focus the assets required in the right direction to improve the performance of the intelligence establishment regarding proliferation.

Intelligence organizations must also widen the scope of their investigations beyond the limits observed prior to the Iraqi experience. Before Iraq's nuclear program was revealed to its full extent, the C.I.A. and other organizations searched for signs of nuclear weapons proliferation using what Peter Lavoy has described as "ladder" logic.[144] In other words, they expected to see signs of development mirroring that used by nations with established nuclear weapons programs, such as the U.S. Using this method the West believed that Thuwaitha, a site south of Baghdad on the Tigris river, was the only confirmed site where nuclear research took place.

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[143] Dunn, p. 33.

[144] Mr. Lavoy is a doctoral student at the University of California at Berkeley studying nuclear proliferation. He coined the term "ladder logic" during a lecture he gave at the Naval Postgraduate School in February of 1992.

The investigations that followed the Gulf War revealed ten sites where nuclear research was taking place: Factory 10, Amadiyan, Arbil, Ash Sharqat, Suleimaniyah, Makhour, Tarmiya, Al Qaqaa, Abu Sukhayr, as well as Thuwaitha.[145] The primary reason that so many facilities were overlooked lay in the fact that intelligence was not looking for the right signs of nuclear development. Iraq had in many cases turned to the calutron method, which is years behind current uranium enrichment procedures, as well as being inefficient and slow.[146] Apparently, none of the intelligence agencies that monitor Iraq thought to look for signs of the calutron method. By relying upon "ladder" logic, they had searched for signs of uranium enrichment using more conventional, modern methods.

Instead of climbing the ladder of development that nations before it had climbed, however, Iraq turned to a "lateral" technique. Instead of developing more advanced methods of enriching uranium, the Iraqis constructed a large number of calutrons to meet their needs.[147] Instead of going up the development ladder, they stayed at one level and expanded "in the horizontal." The world's intelligence organizations must

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[145] Timmerman, back cover.

[146] Norman, p. 644.

[147] "By-Ways that Lead to the Bomb," The Economist, 20 July 1991, p. 101.

adapt their methods in order to detect all forms of nuclear weapons progress, both vertical and horizontal.[145]

How will improved intelligence and reconnaissance contribute to the four objectives mentioned previously? Improved detection abilities may deter nations from desiring nuclear weapons, because of the political costs of such an effort being revealed. If these nations feel that any clandestine action they undertake may be exposed, they may be less likely to commit such an act. Upgrades in intelligence and reconnaissance may also prevent those who desire nuclear weapons from obtaining them. If exporting nations fear exposure of illegal exports to nations interested in proliferation, they may be less likely to take the risk. In addition, the cost to those nations seeking nuclear weapons will increase, due to the additional cost of concealing their facilities from the outside world.

Intelligence and reconnaissance advancements could also assist in coping with the nuclear arsenals of new nuclear weapons nations. The sooner the rest of the world discovers a nation that has "slipped through the cracks" of the nonproliferation regime and developed nuclear weapons, the sooner economic and political pressure can be brought to bear

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[145] Horizontal, as it is used here, is defined as using an antiquated method on a very large scale. This is a very inefficient way of obtaining nuclear weapons, but given time it can be successful. Vertical is defined as attempting to obtain more advanced technology to reach the goal of nuclear weapons deployment.

upon such a nation to minimize the political or physical damage that may result. This could include convincing such a nation to join the Nuclear Suppliers Group or, conversely, coordinating political and military measures to eliminate that nation's ability to employ nuclear weapons.

This leads to the fourth conceivable objective: in some cases, it might be deemed advisable to destroy the nuclear arsenals of nations that obtain them. Enhanced intelligence and reconnaissance can assist in targeting, as well as in warning nations within range of the arsenal of a dangerous new nuclear state that there is a threat that must be dealt with. The Gulf War was an excellent example of what a lack of intelligence can do to the targeting ability of a coalition attempting to destroy the nuclear weapons production capability of a state. In Iraq the U.N. coalition did not know about the locations of the ten nuclear sites mentioned previously; they only knew about the site at Thuwaitha. Therefore, an expensive clean-up procedure was necessary even after extensive air operations against Iraq. With accurate intelligence, Iraq's nuclear capabilities could have been destroyed in the early days of the war; instead the U.N. is still trying to track down the facilities involved in Iraq's nuclear weapons program.

Military intelligence in the United States seems to understand the need for an increase in role of intelligence in

future non-proliferation efforts, as this statement from General James R. Clapper, Jr. attests:

> The proliferation of nuclear, chemical, biological, and advanced conventional weaponry is growing higher on my list of priorities. As Mr. Gates has testified, some 20 countries already have or are attempting to acquire nuclear, biological, or chemical weapons. I am concerned that our list of countries could expand in the future. Many third world countries are developing dual-use technologies that could be diverted for the production of such weapons... All of this obviously underscores the need for continuing close coordination between intelligence and policy in confronting these threats.[140]

B. POLITICAL WEAPONS

The primary political weapons, the Non-Proliferation Treaty and the International Atomic Energy Agency, displayed some serious shortcomings in the Iraqi experience. Since the safeguards implemented by the N.P.T. and the I.A.E.A. were only in effect at declared sites, there were at least nine sites in Iraq that were under no safeguards whatsoever. The NPT also has no provision for punishment if an offender is caught. Therefore there are only political incentives to obey the restrictions contained within it. A third shortcoming of the present political regime is an inability to deal with dual-use materials. Dual-use refers to both civilian and military nuclear applications. A fourth weakness, although it does not apply to Iraq because Iraq was a signatory of the

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[140] James R. Clapper, Lt. Gen., USAF, Director of Defense Intelligence Agency, Testimony before the Senate Armed Services Committee, 22 January 1992, p. 17.

NPT, is the fact that the NPT is not all-inclusive. Since only the nations that sign the NPT are subject to its restrictions, nations such as China, Israel, South Africa, India, and Pakistan have been able to engage in nuclear trade without any international safeguards (although China and South Africa have since joined the NPT). If these shortcomings can be corrected, at least to some degree, the NPT and the I.A.E.A. may become more effective instruments in the struggle against nuclear proliferation; if not, however, the present nonproliferation regime may lose credibility as more and more nations take advantage of its weaknesses.

In order to fully understand the successes and failures of the current non-proliferation regime, it is necessary to examine the original attempt to stop the spread of nuclear weapons: the Acheson-Lilienthal Report. This plan, overcome by the political situation in the late 1940s, may hold some clues for a more successful future non-proliferation regime.

The Acheson-Lilienthal Report, compiled in March 1946, suggests three criteria through which the success of a non-proliferation regime could be measured: the extent to which it afforded security against atomic warfare, the extent that it removed the possibility of atomic weapons being used in war, and the extent it established patterns of wisdom. The document stressed the need for international control over all dangerous nuclear activities as the means to best achieve

these goals.[150] Although such control may be an impossible task even in the current political situation, there are several points contained within the report that may have applications in the effort to increase the viability of the non-proliferation regime:

- Inspections are not sufficient in and of themselves to stop the spread of nuclear weapons.
- If weapons grade material is allowed to be used for peaceful purposes, no safeguard system could prevent diversion to weapons applications.
- An effective safeguard system must reduce the problem to manageable proportions and provide unambiguous warning signals. Clear, definable barriers between legal and illegal activities must be drawn.
- Any inspection agency set up must keep up, both technically and imaginatively, with the organizations and nations attempting to evade its safeguards.
- Negative enforcement, such as economic sanctions directed toward states attempting to attain nuclear weapons status, is not sufficient. If a nonproliferation regime is to be successful, it must also employ some measure of positive reinforcement, such as rewarding cooperating nations with access to peaceful nuclear energy.[151]

When the current non-proliferation regime is analyzed using the above criteria, it falls short in many areas. First of all, the I.A.E.A. depends totally upon N.P.T. safeguards to prevent the spread of nuclear weapons. These safeguards are

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[150] U.S. Department of State, "A Report on the International Control of Atomic Energy," Publication No. 2498, (Washington: U.S. Government Printing Office, 16 March 1946), p. 3.

[151] The above points were taken from "A Report on the International Control of Atomic Energy," in the following manner: points 1 and 4 came from page 6, point 2 from page 21, 3 from pages 9 and 22, and 5 from page 9.

an important factor in the effort to prevent nuclear proliferation, but they should not be the sole tool. It must be remembered that N.P.T. safeguards only provide partial protection against one path to nuclear proliferation: diversion.

> ...[S]afeguards are only designed to detect one step on one of the paths to nuclear weapons- the diversion of nuclear material from declared peaceful nuclear activities to nuclear weapons or other nuclear explosive devices. I.A.E.A. safeguards under the treaty are primarily systems of material accountancy, designed to verify statements by an N.P.T. party regarding the presence, amounts and use of nuclear material on its territory. They depend greatly on the declarations, and the national systems of accounting and control, of the states being inspected.[14]

Although this is a vital operation that must be performed, it is useful to recall that the Acheson-Lilienthal report concluded that if weapons grade material is allowed to be used for peaceful purposes, no form of safeguarding will be successful. Iraq proved that diversion can be accomplished on a small scale, although Iraq depended primarily upon indigenous uranium enrichment. At the Tuwaitha site, which was subject to I.A.E.A. safeguards (unlike most of Iraq's uranium enrichment program), the Iraqis had managed to divert three grams of plutonium, which, although insignificant in military terms, demonstrated that the current safeguard system even has some problems dealing with the only problem it has the ability to confront.[15]

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[14] Pilat, p. 1227.

[15] Nye, p. 1294-95.

The lack of a warning signal or barrier short of nuclear weapons production is yet another shortcoming of the current regime. The present system allows for all components necessary for atomic bomb production to be present, as long as no assembly of a device takes place, without violation of the N.P.T. Once a non-nuclear weapons state has acquired these components and wishes to produce nuclear weapons, it only need serve notice to the I.A.E.A. that it is withdrawing from the N.P.T. Under the "supreme interests" clause (Article X), a nation may withdraw on "three months" notice, while retaining the nuclear materials and technical expertise that it gained as a signatory of the N.P.T. The Acheson-Lilienthal suggestion that individual nations and citizens be prohibited from engaging in activities deemed "inherently dangerous," such as uranium mining and using weapons grade material for peaceful purposes[154] may be politically impossible to implement, but a middle ground reducing such activities to a more manageable level may be within reach of the current regime.

Although the I.A.E.A. has kept up technically with the nations it safeguards, the Iraqi situation has revealed a problem of imagination. By relying upon old technology, such as calutrons, the Iraqis were able to conceal large portions of their nuclear weapons program. The I.A.E.A. must

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[154] Acheson-Lilienthal, p. 22.

concentrate on detecting all forms of enrichment, not simply modern forms such as the gas centrifuge.

> Although calutron technology is probably not controllable, we cannot afford to regard it as an unlikely path to enrichment. We will need to monitor indicators of electromagnetic separation programs (for example, massive electricity use) and share information and intelligence on possible users.[155]

The I.A.E.A. has perhaps over-emphasized positive reinforcement rather than negative enforcement. As well as being responsible for preventing the diversion of nuclear materials meant for peaceful purposes to military applications, the I.A.E.A. is responsible for fostering the exchange of peaceful nuclear technology from nuclear weapons states to non-nuclear states.[156] This dual role may undermine the I.A.E.A.'s ability to safeguard the nuclear material obtained by non-nuclear weapons states. Despite the Acheson-Lilienthal report's faith in "denaturing" as a process whereby nuclear materials can be rendered inadequate for use in a weapons program, it has since been established that denaturing does not prevent materials earmarked for peaceful purposes from being used for weapons.[157] Therefore, there is a paradox created:

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[155] Pilat, p. 1228.

[156] Spector, Nuclear Proliferation Today, p. 437.

[157] Albert Wohlstetter, Thomas A.Brown, Gregory Jones, David C. McGarvey, Henry Rowen, Vince Taylor, and Roberta Wohlstetter, Swords from Plowshares: The Military Potential of Civilian Nuclear Energy (Chicago: University of Chicago Press, 1979), p. 52.

> In fact, the fundamental overlap of the paths to nuclear explosives and to civilian uses of nuclear energy has been recognized since the mid-1940s. We have almost from the start said that the military and civilian atoms were substantially identical, yet paradoxically, that we wanted to stop the one and promote the other.[153]

The I.A.E.A. has begun to take measures to correct its faults. Hans Blix, the director of this organization, has suggested that a subcommittee be set up in the I.A.E.A. in order to hear intelligence reports from member nations that involve nuclear proliferation in other nations.[154] There are two major weaknesses with this approach. First of all, nations may report such activities in order to harass another nation for political or economic reasons, or in order to throw suspicion off of itself. Although the subcommittee is to be designed with the ability to investigate claims to insure that they are valid, false reports could take up resources that could be better used elsewhere.

The second, and most important, fault with this approach lays within the concept of intelligence-sharing itself: would a nation be willing to give its intelligence information to the I.A.E.A., which is made up of one-hundred and forty nations? Giving such information to such a vast body would mean giving valuable intelligence to foes as well as friends, and may be politically impractical. These weaknesses will

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[153] Ibid., p. 17.

[154] Paul Lewis, "Atomic Energy Agency Maps Plans to go After Nuclear Cheats," New York Times, 11 October 1991, p. A6.

dilute the effectiveness of the proposed measure, and lead to the conclusion that more actions are necessary on the part of the I.A.E.A. if it is to remain a viable organization.

The I.A.E.A. needs to expand its inspection capabilities beyond the current limitations of examining only declared sites. The NPT treaty contains provisions for inspecting undeclared locations.

> Under the basic procedures for NPT inspections (INFCIRC/153), however, the IAEA retains a virtually never exercised right to request special inspections at undeclared sites or locations, particularly if it believes this necessary to fulfill its responsibilities to safeguard all nuclear material and all peaceful nuclear activities in NPT parties. If the NPT party refuses that request, the matter- if 'essential and urgent'- can be referred by the IAEA Director-General to the Board of Governors. The Board then has recourse to the UN Security Council.[160]

The I.A.E.A. needs to reaffirm its right to conduct such special inspections, and take advantage of this provision. If possible, the organization should seek means to increase its inspection power, although political limitations may arise: if nations intent on nuclear proliferation feel they are being pressured too much, they may opt out of the treaty organization by way of the 'supreme interests' clause that permits a nation to withdraw from the NPT with only "three months" notice if said nation feels its "supreme interests" are at stake.[161] Therefore, any moves to increase the power

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[160] Dunn, p. 31.

[161] Spector, Nuclear Proliferation Today, p. 438

of inspection must go forward cautiously. The necessary caution probably precludes any attempts to add an 'anytime, anywhere' clause to the treaty.

The I.A.E.A. must also seek to give the U.N. Security Council a larger role in the non-proliferation regime.[162] An increased linkage between the I.A.E.A. and the United Nations Security Council is perhaps the most important step in the fight against nuclear proliferation. If a precedent could be established that involves the U.N. Security Council to a greater degree, this might lend the NPT the teeth that it currently lacks. Perhaps this could be done by giving the I.A.E.A. Director-General a more direct link to the Security Council.[163] The I.A.E.A. also needs to keep better tabs on dual-use materials and equipment. Iraq diverted large amounts of materials and equipment gained under peaceful auspices to weapons applications. The Iraqis were able to do this because of the outdated mode of uranium enrichment they used; the exporters that actually cared whether their merchandise went to peaceful purposes may not have realized

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[162] Kay, p. 4. David Kay feels that the UNSC "... needs to take a forthright and clear stand that any further acquisition or attempted acquisition of nuclear weapons by any state will be considered by it as a threat to international peace and security under Chapter VII of the UN Charter..."

[163] Dunn, p. 31.

that these exports were going to calutron production.[164] The same lack of realization may also be attributed to the I.A.E.A. Therefore, the I.A.E.A., working in concert with the Nuclear Suppliers Group, needs to increase the number of imports that it monitors as potentially dangerous.

Any political solution to the nuclear proliferation regime is going to be severely limited in its effectiveness. The above improvements, however, could give the I.A.E.A. a more valuable role in the struggle to reduce this threat, as long as the United Nations Security Council is brought into the picture, especially the Special Commission. A stronger inspection regime could reduce the desire to obtain nuclear weapons the same way that improved intelligence could, by increasing the risk that an offending nation will be caught. The I.A.E.A must also cease activities which hinder the efforts of the other organizations attempting to stop nuclear proliferation. An example of this has been provided by the repeated statements by the I.A.E.A.'s Maurizio Zifferero, who has been making public statements since June 1992 that the Iraqi nuclear weapons clean-up is complete, and that only details remain.[165] These statements have been made despite constant efforts by the U.N. delegations to demonstrate that

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[164] Once again, the Timmerman book discusses in great detail actions by firms that, both knowingly and unknowingly, helped Iraq in its quest for nuclear weapons.

[165] Gary Milholin, "Iraq's Game Won't Fool the UN Eye," The International Herald Tribune, 30 June 1992, p. 6.

there are major portions of Iraq's nuclear weapons program that still need to be uncovered.

> Zifferero's statement was interpreted by some as giving Iraq a clean bill of health on the nuclear issue, a step which could have put pressure on the U.N. Security Council to ease sanctions. On September 4, the IAEA issued a clarification stating that Zifferero's comment did "not exclude the possibility of further discoveries [of nuclear activities] in the future," and that "it is still too early to conclude that such [surprises] will not be the case." But Zifferero, the same day, essentially repeated his earlier judgement, saying "at present, there is no such thing as an ongoing Iraqi nuclear program."[154]

This seems to demonstrate the paradox that the I.A.E.A. must operate within: at the same time it is promoting the spread of nuclear material for peaceful purposes, it is attempting to monitor and safeguard this same material to ensure it is being used for its stated purpose.

A stronger I.A.E.A., coupled with the U.N.S.C., could also deter nations attempting to get nuclear weapons from getting them. If more intense inspection procedures discovered that a nation was cheating, export freezes could be placed upon any future dealings with this nation until it dismantled its nuclear weapons program. Also, stronger inspection procedures could deter other nations from exporting goods that could be used in a nuclear weapons program. If such a nation feared that these safeguards could detect that it was involved, fear of political repercussions might prevent it from dealing with a nation that had ulterior motives involving nuclear weapons.

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[154] Jon B. Wolfsthal, "IAEA Inspector Calls Iraq Nuclear Program Over," Arms Control Today, September 1992, p. 29.

C. EXPORT CONTROLS AND ECONOMIC TOOLS

The degree to which the nations of Western Europe and the United States assisted in the creation of a nuclear proliferation problem in Iraq underscores the need for a revamping of the current system of export controls. Multinational corporations, at least in some cases, have exhibited influence over the governmental oversight organizations in charge of monitoring exports. In other cases, government concerns in other areas have overridden concerns about export-assisted nuclear proliferation. These nations have already started to upgrade the export regime that is in place, through new controls on dual-use exports and by bringing new nations, such as China, into its confines.[167] There are many more steps that must be taken, however, both in the international sense and by individual nations.

The primary tool of the current international export control system is the Nuclear Suppliers Group. The N.S.G. was created in 1978, in reaction to the 1974 Indian "peaceful nuclear explosion," which was the result of U.S. and Canadian nuclear exports to that country.[168] The N.S.G. places restrictions on the export of nuclear equipment and material

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[167] Dunn, p. 28.

[168] Nye, p. 1294.

by stating that the recipient nation must agree to certain stipulations. These stipulations include: pledging not to use said goods for the manufacture of nuclear weapons; acceptance of international safeguards; a provision for adequate security of imported nuclear materials and equipment; an agreement not to re-export these goods unless the secondary recipient nation agrees to the same stipulations and the original exporter agrees with the second trade; restraint with items that may prove valuable in weapons production; and agreements to seek regional facilities instead of unilateral ones.[16] A strength of this organization is that it includes France, which until 1991 was not a part of the N.P.T.[17] A serious weakness of the NSG is that, if the exporting country's government chooses to look the other way for domestic reasons as a firm ships out nuclear materials, it is very difficult to enforce the provisions of the NSG.

In order to upgrade the export control system currently in place a number of steps must be taken. First of all, governments must be held accountable for the actions of firms within their borders. Once again, if the U.N. Security Council could take a more active role in disciplining irresponsible governments, perhaps such actions could be discouraged. Secondly, perhaps international representatives

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[16] Spector, Going Nuclear, p. 351.

[17] Dunn, p. 29.

comprised of individuals from all the NSG nations could be placed in positions within each country to monitor nuclear exports. This could discourage rules-breaking by the member governments by increasing the odds that they could be caught. Third, efforts must be made to convince all nations to sign the NSG treaty. This could fill the gaps that are present currently, which are created by nations that are outside the auspices of the NSG. The U.N.S.C. could be a fine forum to spread the authority of the treaty.

Once all of these international steps have been taken to strengthen the export regime, a key problem, revealed by the Iraqi case, will remain: tracking dual-use exports. Steps have been taken towards correcting this weakness:

> In 1991, nuclear suppliers met to tighten controls on the dual-use technologies that may be used for both nuclear weapons and civilian purposes, and Britain and France declared that they, like most major supplier countries, would require that any recipient state must place all of its nuclear facilities under I.A.E.A. safeguards, not merely those facilities that involved transferred materials.[171]

Even with such improvements in the export control system, it is likely that calutron technology, and the imports it requires, will remain uncontrollable from a supply standpoint.[172] Therefore, the actions of the N.S.G. must be coordinated with those of the I.A.E.A. and the United Nations Security Council in an effort to close all gaps in the current

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[171] Nye, p. 1294.

[172] Pilat, p. 1228.

non-proliferation regime. If it is difficult to determine whether exports are to be used towards improper ends, agencies should search for other signs that illegal activities are taking place.[17]

The key use of export controls towards meeting the goals of non-proliferation is preventing a nation that desires nuclear weapons from acquiring them. Export controls also raise the cost to the importing nation by making it more difficult to acquire the equipment and material needed to produce nuclear weapons. This may discourage some nations from attempting to acquire these types of weapons.

The case of the United States has been singled out by Gary Milholin, the Director of the Wisconsin Project on Nuclear Control. In his assessment of United States actions during the creation of Iraq's nuclear weapons program, he finds a number of faults with the way the U.S. handles nuclear exports. Two of his criticisms involve more Congressional oversight and less secrecy, but the third is the most compelling:

> It [Congress] should take this function [dual-use licensing] away from [the Department of] commerce and give it to an independent regulatory agency such as the Nuclear Regulatory Commission or to some other department, such as [the Department of] defense, that has no export promotion function... It would be safer and more logical to make the

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[17] Ibid. Pilat uses the example of searching for massive electricity use when attempting to determine if calutrons are being operated. A second useful technique that has been suggested by the U.N. and the I.A.E.A. is to test waterways for radioactive indicators.

> Defense Department the "hub" for controlling all exports relevant to nuclear, chemical, biological, and missile proliferation... Commerce, which has no substantive expertise on dual-use technology, should retain only a record-keeping function.[174]

This brings the same problem to light within the U.S. export monitoring system that is present in the international non-proliferation regime, and specifically the I.A.E.A.: The same organization that promotes the export of nuclear materials for so-called "peaceful purposes" conducts the licensing procedures to determine if exports are going to the stated end use. Whether Mr. Milholin's idea is followed, or a third organization is created in order to license exports, this is a contradiction in missions that must be resolved.

The embargo is an economic tool that is second in utility only to export controls. An embargo can be brought to bear upon a nation that is openly violating rules of non-proliferation as a weapon to force said nation to give up its attempts at nuclear-arming. The most recent example is the U.N. embargo against Iraq, but it has had mixed results at best. The Iraqis have not responded to the embargo by complying with U.N. directives concerning nuclear weapons. Rather, Iraq has made attempt after attempt to block the elimination of its nuclear weapons program.

Attempting to force a leader like Saddam Hussein to comply with world demands through an embargo is a difficult task.

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[174] Gary Milholin, Licensing Mass Destruction: U.S. Exports to Iraq: 1985-1990, p. 13.

First of all, he is not the personally affected; the people of his nation are. As he has demonstrated repeatedly in the Gulf War, the Iran-Iraq War, and the repeated harsh treatment of his own citizens, Hussein is not concerned with the public's well-being.

The embargo could be rationalized as an attempt to put the people of Iraq in such a dire situation that they will overthrow Saddam. This is not a valid argument, however, given the strategic culture of Iraq as discussed in an earlier portion of this thesis. Secondly, Hussein may see his grip on power loosening, and may see his military as the only instrument that is keeping him in power. He does not want to see his military weakened in any way, which the elimination of nuclear-weapons programs would do. Third, Saddam has made seeking the atomic bomb a virtual crusade since taking power in July of 1968, and he is very reluctant to give up the progress he has made. His stated goal has been an Arab atomic bomb,[175] and he may feel that this project gives him prestige in the Arab world.

These factors create a situation in Iraq that is unique when compared to that of other nations. Although in the situation in Iraq the results of the embargo have not been as successful as the U.N. may have hoped, this does not mean that embargoes are useless as a tool to force a nation to give up

[175] Timmerman, p. 6.

its nuclear-weapons program. It may be the only viable alternative to undertaking a major military engagement against a nation seeking nuclear weapons.

Economic embargoes, if successful, can be used in two ways to achieve the goal of limiting nuclear proliferation. First of all, an embargo can convince a nation to give up its quest for nuclear weapons. If the cost to such a nation is increased due to this form of economic punishment, it may decide to forego the benefits of possessing a nuclear arsenal. Secondly, embargoes can make it difficult for a nation that has already acquired nuclear weapons capability to maintain it. If the raw materials and equipment necessary to continue fielding a nuclear force and the infrastructure that support it are cut off, then a nation may have no choice but to eliminate its nuclear capability.

CONCLUSION

The only way to stop the problem of nuclear proliferation is with a unified worldwide effort. The U.N. Security Council should become the primary tool in the fight to limit the spread of nuclear weapons. The U.N. is the only organization that contains all the parties involved, has the ability to make international laws with all of the parties present in the decision-making, and has the ability to enforce these laws in a multilateral fashion.

The U.N. has the ability to use all the tools discussed in this thesis: intelligence, and economic and political weapons. The nations of Europe and the United States must be at the forefront of these actions, however, and ensure that they follow standards that have been developed in previous non-proliferation efforts. With the disintegration of the Soviet Union, nuclear weapons proliferation is becoming one of the leading threats to world peace. The break-up of the U.S.S.R. has also magnified the problem of nuclear proliferation by giving some nations access to Soviet nuclear technology. The threat of nuclear proliferation is very real, and the current non-proliferation regime is proving itself unable to deal with it.

The current non-proliferation regime is at a vital crossroads in its history. Depending upon the results of the inspections in Iraq, the I.A.E.A. could flourish or fail. If the Iraqi nuclear weapons program revives after the inspections are concluded, the Vienna-based I.A.E.A. will be revealed as incapable of stemming the tide of nuclear proliferation. If the Iraqi nuclear weapons program does not resume operations in a manner that will lead to the bomb within the next few years, then perhaps the world's confidence in the I.A.E.A. can be restored. This is dependent, however, on how large a role the I.A.E.A. plays in preventing the Iraqis from reviving their nuclear weapons program. The U.N.S.C. should play a larger role in the future of nuclear non-proliferation, leaving the I.A.E.A. in an advisory role.

An alternative argument that may arise is that the I.A.E.A. could be strengthened in an effort to stem nuclear proliferation, rather than replaced. However, the I.A.E.A.'s lack of enforcement powers and the international community's inability to force nations to join the NPT regime or to retain nations that desire to withdraw from the regime both place the I.A.E.A. in an untenable situation. Perhaps the only way to strengthen the present regime is to change the language of the treaty itself; but that might cause an exodus of nations interested in possibly pursuing nuclear weapons at some future time, as well as of those nations which may feel that stricter

inspection standards could interfere with their peaceful nuclear programs.

This leaves the I.A.E.A. in a "catch 22" situation: if the language of the treaty is not strengthened, its current weaknesses will remain; but, if the language is changed, the number of signatory nations may well decline, hence weakening the ability of the I.A.E.A. to contribute to a world free of nuclear proliferation. This inability to prevent nations from withdrawing from the treaty regime also hampers the I.A.E.A.'s ability to invoke the aforementioned clause allowing it to inspect undeclared facilities and to call on the U.N.S.C. for assistance if these inspections are hampered. If this clause was utilized, the target nation might choose to withdraw from the regime rather than to submit to the demands.

These factors demonstrate the primary limitation of the current I.A.E.A. regime: any nation that does not want to be a part of the legal regime does not have to join it or to remain within its confines. The U.N.S.C. can overcome this limitation, because its enforcement capabilities (including embargoes and peacekeeping) can force nations to comply. The U.N.S.C. does not rely upon a nation's desire to be reined in (with regard to nuclear weapons progress), and therefore the I.A.E.A. must strengthen its link to that body. The Non-Proliferation Treaty has the same weakness as any treaty. Compliance is only guaranteed as long as signatories wish to comply. Therefore, strengthening the I.A.E.A. is not the only

answer to limiting future nuclear proliferation. Giving more responsibility to the U.N.S.C. in this area could be much more effective. The spread of nuclear weapons is a threat to world peace, and should be treated as such by the United Nations.

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